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No. 104

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I. GENERAL INFORMATION

NECESSITY OF INTENSIVE FARMING DISCUSSED

HK170945 Beijing JINGJI YANJIU [ECONOMIC RESEARCH] in Chinese No 8, 20 Aug 80 pp 42-46

[Article by Feng Baolin [7458 1405 2651], Beijing Agricultural College: "Intensive Farming Is the Fundamental Way To Develop Agriculture"]

[Text] I. The Necessity and Feasibility of Intensive Farming

There are two ways of developing agriculture: extensive farming and intensive farming. The former is carried out under conditions where the technological level is comparatively low and the investment of production material and labor per unit area of land is comparatively small. The latter is carried out where the investment of production material and labor per unit area of land is comparatively large and advanced technological measures are adopted. Marx said: "In economics, so-called intensive farming entails concentrated use of capital on the same areas of land and not dispersed use on some areas of neighboring land." (Marx: "Das Kapital" Vol 3, p 760, The People's Publishing House, 1975) In his works about land, Lenin further explained the meaning of intensive farming: To use more means of production and labor on certain areas of land. For example, to use more fertilizer and pesticide and to use fine strains, advanced agronomy, advanced fodder processing technology and new production tools and to improve management. (Collected Works of Lenin, "New Material on the Law of the Development of Capitalist Agriculture" Vol 22, pp 24-30) The purpose of intensive farming is to achieve more yield per unit of farmland with less labor and less consumption of the means of production. That is to say, the purpose is to constantly increase land productivity. This is the fundamental way of developing agriculture. Intensive farming is necessary because of limited farmland and it is possible because of unlimited soil fertility. As land areas are absolutely limited, it is impossible to meet the increasing demand for farm products by society and people through unlimited expansion of cultivated areas. Such a demand can only be solved through intensive farming to increase land productivity. Is it possible to increase farm output through intensive farming to improve land productivity? Objectively, it is possible because of unlimited soil fertility. As we know, according to its formation and role, soil fertility can be divided into natural fertility and artificial fertility, or effective fertility and potential fertility. Natural fertility is formed by many factors such as the nature of the fertility itself, weather, organisms and topography during the natural development of the soil. Artificial fertility is formed by artificial factors such as ploughing, application of fertilizer, irrigation and soil improvement. The fertility that can be absorbed by plants is called effective fertility. The fertility that cannot be at once absorbed is called potential fertility. The labor of mankind not only turns potential fertility into effective fertility but also constantly increases effective fertility through effective measures. Therefore, as long as we pay attention to the use and care of farmland and take proper measures, natural fertility will not be exhausted while artificial fertility will continue to increase. In this way, we will be able to increase effective fertility by a big margin and achieve more and more potential fertility. Marx said: "Fertility is an objective property of soil, but from the viewpoint of economics it is always related to the present level of agro-chemistry and agricultural mechanization. So when the level changes, the fertility will also change." (Marx: "Das Kapital" Vol 3, p 733) This means that soil fertility is an objective reality, but to increase it, it is imperative to take various measures. In addition, with the development of science and technology and productivity, the more the soil is used, the more fertile it becomes and the higher its output. Therefore, it is clear that intensive farming and improvement of soil fertility are the basic ways of developing agriculture. It has been proven in our country and abroad. The history of the development of agriculture in many countries shows that despite differing situations and adoption of different methods, in every case agriculture has undergone a process of development from extensive farming to intensive farming. The level of intensive farming in some advanced countries has developed rapidly, particularly since the beginning of the 20th century. That is why Lenin said: "In Europe, the development of agriculture mainly depended on intensive farming and on the expansion of cultivated areas. It depended on improving the quality of ploughing and increasing investment on the existing farmland. Such is the main principle for developing capitalist agriculture. This will also gradually become the main principle in the United States of America." (Collected Works of Lenin, "New Material on the Law of the Development of Capitalist Agriculture" Vol 22, p 58) Lenin's words have been vindicated by the actual development of history. The United States of America is a vast country with a small population. Before 1920, U.S. agriculture mainly relied on extending cultivated areas. During the 56 years from 1866 to 1920, cultivated areas in the United States increased from 1 billion mu to 2.4 billion mu, and grain output tripled. Apparently after 1920 the acreage did not increase; but because of the introduction of intensive farming to increase soil productivity, agricultural output doubled, particularly after the 1950s. Grain output increased to 523 billion jin in 1977 from 281.4 billion jin in 1950; cotton increased from 43.42 million dan to 63.14 million dan while meat increased from 12.2 million tons to 25.65 million tons. The output of 52 varieties of crops increased by an average of 64 percent. The output of cotton increased from 313 jin in 1950 to 760 jin in 1977 per mu. Thus in 27 years, cotton output increased by one and a half times thanks to the popularization of hybridization, more fertilizer and the use of herbicides. The per-mu output of wheat, rice paddy and cotton also increased considerably. Japan, with little land and huge population, has paid special attention to intensive farming. During the 30 years after World War II, Japan spared no efforts in improving soil (farm capital construction), with water conservation projects as the key, in applying more chemical fertilizer, using fine strains, carrying out scientific research, promoting advanced technology and carrying out farm mechanization. Japanese per unit area grain output was 395.5 jin in 1946, 563.4 jin in 1960 and 741 jin in 1975. Over the past 3 decades and more after liberation, the level of intensive farming and soil productivity in our country increased considerably. Visible results have been achieved in our farm capital construction. The acreage under irrigation has increased to over 700 million mu, double the figure of the early liberation days, and constitutes 48 percent of the total acreage under cultivation. The acreage under mechanized cultivation accounts for 41 percent of the total while 70 jin of fertilizer is applied per mu of field. Great progress has also been made in various branches of agricultural scientific technology. As a result, farm output has increased considerably without expanding cultivated acreage. Such situations show that intensive farming to increase soil productivity is an inexorable trend in various countries for developing their agriculture.

II. The Significance of Intensive Farming and How To Intensify It

It is very important for our country to carry out intensive farming and increase soil productivity.

First, we have little cultivated area and low per unit output; our agricultural output is not in a position to meet demand. The average land acreage and the average cultivated acreage per capita in our country are only about one-third of the world average. In addition, the reserves of our land resources have little potential. The areas of arable land are limited and they are located in remote regions and on sandy terrain. Therefore, huge investment and much equipment is needed to reclaim these areas; it is not an easy job. Even if all the arable land is reclaimed, the average amount of cultivated acreage per capita is still less than most countries in the world while the situation of a huge population and little land will remain unchanged. In addition, the per unit area output in our country is not high, statistics for 1977 showed that based on the cultivated acreage, the per mu grain output was 491 jin and when based on shown areas, it was only 313 jin, lower than many countries. Only through intensive farming and improving soil productivity can we make up for the shortage of cultivated acreage and increase farm production to meet the needs of the people and the state. The role of agriculture as the foundation of the national economy must be fully displayed to develop socialist construction.

Second, our scientific and technological level and our ability to fight natural disasters are still low and we are still largely dependent on the natural environment. To practice intensive farming, apply more fertilizer, pesticide and herbicide, use advanced farm machinery, plastic sheets and other industrial products, materialize water conservancy projects and use advanced science and technology will help people to understand and use objective laws, gradually free themselves from the control of the natural environment, strengthen their ability to control the natural environment and promote symbiosis between organisms and environment. In this way, people will be able to fight natural disasters such as drought, floods and pests and diseases and insure higher and stable yields.

Third, our country's production level is low, the contradictions in the use of land for agricultural production are very serious and the structure of production is irrational. Because our cultivated land is limited, serious contradictions exist between agriculture, forestry, animal husbandry, sideline production and fisheries, on which crops are best suited to which land and between the use and care of the land. It is because of such contradictions that the location of farm production is not rational, agriculture, forestry, animal husbandry, sideline production and fisheries are out of proportion and the production of economic goods is affected. Of the gross agricultural output value in 1977, sown crops accounted for 67.5 percent, forestry 3.1 percent, animal husbandry 13.7 percent, sideline production 14.1 percent (11 percent were industries run by the people's communes and production brigades), and fisheries 1.5 percent. There was a larger increase in gross agricultural output value over the past 2 years but the disproportionate relations between agriculture, forestry, animal husbandry, sideline production and fisheries basically remain unchanged. The production of economic crops and crops for fertilizer is still affected by the production of grain. The practice of intensive farming to fully tap soil potentials and increase per unit area yield will gradually solve the above-mentioned contradictions, promote the all-round development of agriculture, forestry, animal husbandry, sideline production and fisheries, comprehensively develop agriculture, industry and commerce and increase the level of socialization. In this way, our country will be able not only to produce stable and high yields but will also be characterized by a beautiful natural environment. Intensive farming covers many aspects, such as changing the structure of production and the composition of crops, developing many varieties of crops, increasing the multiple crop index and making full use of soil resources; transforming the farming system so as to combine utilization of the land with caring for it; carrying out farm capital construction to set up fields with stable and high yields; and comprehensively harnessing mountains, rivers, fields, forests and roads. In this way, we will be able to use more means of production and laborers on certain areas of land with better economic results. The basic way to improve intensive farming is to use modern material and technology. In practicing intensive farming, living labor and material labor have a different composition in the total investment and they can be divided into two categories: labor intensive and capital intensive. Labor intensive indicates that laborers make up a greater proportion of the total investment on specific areas of land. Capital intensive indicates that the materials make up a greater proportion. With a long history of agricultural production, our country has accumulated traditional intensive farming experience. But because of backward agricultural science and technology, our agriculture is still mainly equipped with handmade tools, coupled with manpower and animal power. Our agricultural production technology mainly stemmed from accumulated and traditional experience while our intensive farming mainly depends on the intensive use of laborers. Therefore, our experience in intensive farming belongs to the labor intensive category. At present, our country has not reached the capital intensive stage while advanced technology and equipment are yet to be fully utilized. That is why the economic results of our intensive farming are not good enough while soil productivity and labor productivity are still comparatively low. Therefore, it is imperative to gradually replace backward production tools with modern farm machinery, to replace man and animal power with mechanical and electrical power and to replace traditional farming experiences with modern technology. The composition of organisms and the level of agricultural technology must be gradually raised so that our agriculture can develop from labor intensive to capital intensive. This is the main content of agricultural modernization. With such achievements, we will be able to carry out production and fight against nature consciously, and not blindly, to make use of and transform nature rationally, with economic results, and to produce increasing amounts of agricultural, forestry, animal husbandry, sideline and fisheries products to gradually improve the level of our agriculture.

III. In Carrying Out Intensive Farming We Must Strive To Achieve Economic Results and Handle the Relations Between Economy and Technology

As additional means of production are needed in carrying out and improving intensive farming, the total costs of production and per unit cultivated acreage will constantly increase. At the same time, the output per unit of acreage and the net income of agriculture, forestry, animal husbandry, sideline products and fisheries will also increase to bring about better and better results. But in practice, it often happens that because of irrational use of the means of production, huge investment may result in high costs, low efficiency, increased production but with the same income and even increased production with less income. Therefore, the following relations between technology and economy must be well handled:

First, in carrying out intensive farming we must handle well the relations among various technical measures so as to gradually set up an agricultural technological system that accords with objective laws. We must use modern technology and equipment to break away from the traditional relations of balance of the means of production and traditional agricultural technological system. Therefore, it is imperative to gradually set up new relations of balance of the means of production and a new agricultural technological system that accord with reality in various regions so as to achieve better economic results. Such measures are necessary because various technological measures are interrelated and affect one another. If we take only one technological measure and neglect the others, we will not be able to increase output and income. For example, in order to fully display the role of farm machinery, chemical fertilizer and pesticide and achieve good economic results, it is necessary to take corresponding technological measures and improve management. For example, in deep ploughing and leveling land, more fertilizer must be applied, otherwise, the yields could easily drop. The use of fine strains that give high yields must be followed by the application of fertilizer, water conservancy works and other technological measures; without these conditions, it would be more advantageous to use low grade strains with moderate output. The second team of the fifth branch of the friendship farm in Heilongjiang Province has displayed its superiority and attained great achievements after having completely realized mechanization. But the team is still in the early experimental stage and it has not been able to balance the relations between the means of production and the new agricultural technological system. As a result, its economic achievements are not very satisfactory. For example, when the farm was seriously hit by drought in 1978, the team failed to procure pumps and other mechanical equipment. As a result, the output of its 5,000 mu of wheat dropped. In 1979 when the team solved the problem of water conservancy, its per mu wheat output increased to 450 jin, 27.5 percent higher than the 353 jin average for the other branches. The team imported a tractor from the United States, coupled with three sowing machines instead of five as originally scheduled. As a result, the tractor can only draw pull three sowing machines at once, which is a waste of horsepower. In addition, the equipment used in drying and transferring crops into warehouses is incomplete, resulting in extensive use of supplementary manpower and lower labor productivity. In 1978 the team did not pay much attention to using good strains in sowing corn. As a result, the incidence of disease was comparatively high and growth was not uniform. The ears of corn were in different positions, serious lodging occurred, and the final harvest dropped by 10 percent. This shows that when various technical measures are taken, it is necessary, according to specific conditions in various regions, to make overall planning and arrangement and take all factors into consideration so as to establish a balanced relationship of the means of production and form a new agricultural technological system that is in line with objective laws and achieves better economic results from the various technological measures.

[illegible], [illegible]. Investments must be made in carrying out intensive farming. Theoretically, with the development of agricultural science and technology, more investments and various technological measures will bring about endless economic results. But in the process of production and within the confines of a special technological level increases in output and value are limited. Marx said: "The advantage of soil is that each successive investment will bring about benefit while the former investment continues to play its role. But these advantages are accompanied by the fact that the incomes from these investments differ from one another." (Marx: "Das Kapital" Vol 3, p [illegible]) Therefore, we must study the amount to be invested. When the value of the successive investments equals the value of the increased output, the amount of the investment is at its maximum. Of course, in practice, the highest economic results and the proper amount of investment may also be sought through various planning stratagems.

It is really significant to study the proper amount of investment. In this way, when we are making additional investment in certain areas of land, we will pay much attention, under certain technological conditions, as to how to add to the means of production and laborers economically and yet efficiently, how to rationally determine the direction of the investment, avoid working blindly, improve spontaneity and overcome the unscientific guiding ideology of "the bolder people are the greater will be the increase in production." In this way, we will be able to make additional investments in accordance with reality with economic efficiency. At present, a number of regions and production units do not study the proper amount of additional investments. In addition, it is also because of higher prices of industrial products for agricultural use that the diversification of our agriculture is still low. This has resulted in increasing agricultural production costs and decreasing economic results. Statistics in Shandong Province show that total agricultural production costs in 1956 made up 27.6 percent of the total agricultural income; the figure for 1965 was [illegible] percent, followed by 37.1 percent for 1974, 43.3 percent for 1977 and [illegible] percent for 1978. According to investigation of some typical units, each yuan of investment achieved 3.65 yuan of profit in 1956, [illegible] yuan in 1965, [illegible] yuan in 1974, 2.32 yuan in 1977 and 2.38 yuan in 1978. In some units, irrational expenditure makes up about 15 percent of total expenses; such expenditure is more apparent in the waste of [illegible]. So it is important to study the proper amount and economic efficiency of the investment. Such study will also help create conditions for improving agricultural technology to change the amount of the latter investment that is limited by the first investment. In this way, we will be able to make more investments with higher efficiency and constantly improve the level of intensive farming and agricultural production. Lenin said: "Theoretically, it is conceivable to invest any amount of capital on any acreage of land. Of course, it also depends on the existing economic, technological and cultural conditions; it depends on the conditions prevailing in the country at the time." (Collected Works of Lenin, "New Material on the Law of the Development of Capitalism in Agriculture" Vol 22, pp 61-62) Therefore, it is [illegible] that the appropriateness of investment is decided by certain conditions and when we are able to change these conditions, we can then break away from this appropriateness to create a new one. Thus the appropriateness of investment will change according to the changing conditions.

Third, intensive farming must be carried out according to specific conditions in different regions and units. In such a vast country as ours, the natural conditions and the development of agriculture differ in various regions. In addition, agricultural production concerns various living plants that grow according to their own laws. As different crops are grown in different regions with different soil and climate and different features and different crop structures, therefore intensive farming must also be carried out in different ways. Some regions must first of all concentrate their efforts on carrying out water conservancy projects, applying fertilizer and using fine strains while some other regions with rich resources, better water conservancy facilities and more fertilizer but with less population must broaden the aspects of production and concentrate their efforts on improving mechanization and electrification so as to improve productivity and develop agriculture in breadth and depth. In short, the principles governing intensive farming must be varied according to the time and place; they must in no way be "cut with one knife" or standardized.

Fourth, in carrying out intensive farming, we must proceed from reality, necessity and feasibility and undergo a process of development from a low level to a high level. We must bear in mind that our country has a huge population with limited land, a weak foundation and traditional intensive farming experience. But at the same time, we must strive to equip our agriculture with advanced facilities so as to improve the level of intensive farming. We must also continue to use and improve our traditional intensive farming experience. In carrying out intensive farming, we must rely on collective strength with help from the state, fully display the people's initiative in self-reliance and hard work, and overcome shortcomings and develop advantages so as to solve various problems. For example, we must make full use of our rich labor force resources, carry out agricultural capital construction and water conservation projects, develop forestry and accumulate green manure. In short, in carrying out and improving intensive farming, the composition of living labor and the means of production used per unit area of land can only be gradually changed, the ratio of living labor can only be increased gradually and the transformation from labor intensive to capital intensive can only be realized gradually.

CSO: 4007

YAO STATEMENT ON SUMMER GRAIN OUTPUT TO FIFTH NPC CLARIFIED

[Editorial Report] Beijing RENMIN RIBAO in Chinese 31 August 1980, page 4, reported Yao Yilin's statement on the output of summer grain in his report on the National Economic Plan for 1980 as, "As for agricultural output, because of severe natural calamities in many areas, summer grain output is reduced by more than 10 percent." Beijing XINHUA in English 0918 GMT 30 August 1980 gave the statement as follows: "Natural calamities in many areas cut output of summer crops by over 10 percent."

CSO: 4007

NATIONAL

RURAL ENERGY RESOURCES CONSERVATION DISCUSSED

Beijing GUANGMING RIBAO in Chinese 19 Jul 80 p 4

[Article by Wang Mengkui [3769 1125 1145]: "Pay Attention To Solving Rural Village Energy Problems"]

[Text] In considering energy problems during our country's construction of the four modernizations, there can be no looking at them solely from the standpoint of industry and the cities. It is also necessary to pay attention to solving rural energy problems. The 800 million farmers are the largest number of people lacking energy. Both in their daily lives and in production, the shortage of energy in rural villages is a serious problem. This grave situation has yet to arouse sufficient serious attention.

First of all there is the serious inadequacy of fuel in the daily lives of several hundred million farmers. In some places, fuel is lacking for 2 or 3 months or even longer out of a year. Of the more than 170 million households throughout the country, more than 70 million have a serious shortage of fuel. An overwhelming majority of farmers continue the backward practice of burning firewood directly. Departments concerned estimate that about 500 million tons of plant stalks are burned annually nationwide, and when this total amount is used as fuel, only the minimal needs of farmers for cooking fuel are met. In actual fact, about 40 percent of all plant stalks must be used as animal fodder and as industrial raw materials or construction materials, as or indispensable fertilizer (such as from cattle bedding). When fuel is inadequate, the farmers cut down trees (or even scrape off the bark and dig up the roots), cut grass (or even "cut the weeds and dig up the roots"). This produces a loss of plant cover, erosion, a weakening of the vitality of the soil, or even desertification. The ecological balance is destroyed, creating serious consequences. Unless this tendency is firmly reversed, we will bequeath infinite calamities and misfortunes to posterity.

In agricultural production, too, energy supplies are scarce. There are now 160 million horsepower of farm machinery throughout the country, for which only 8 million tons of diesel fuel are supplied in a year--an average of about 50 kilograms per horsepower. This is the main reason why the utilization rate for farm machinery is currently low and utilization costs are high. At the present time, in the broad rural villages hand labor is used for the most part. Farm machinery use averages only 1 horsepower per 10 mu of land, which cannot be considered to make high demands on energy resources. But as the modernization of agriculture progresses, the consumption of energy in agricultural production must inevitably show a marked increase. Without adequate supplies of energy, agricultural modernization is difficult to imagine.

Agriculture is the foundation of the national economy, and modernization must have as its premise the growth of agriculture. In the preparation of national plans it is necessary to take into consideration the energy needs of rural villages, placing the problem of rural energy needs within the total energy development plan for the country, and plan to solve them as a whole. Of course, since the rural population is so vast, the present ability of the country's great electrical grids and large-scale coal, petroleum, and natural gas industries to supply energy to the broad rural villages must ultimately have a limit. Rural energy problems cannot rely entirely on the state for their solution. Therefore, except for petroleum (this the rural villages have no means of solving), and some coal and electric power (this is a problem that rural villages cannot entirely solve), which must be given across-the-board consideration in national planning, the broad mass of rural villages will have to adopt measures and adapt measures to local conditions to obtain a partial solution of their energy problems. On the basis of existing experience, they can at least undertake efforts such as those given below.

Development of methane gas. Between one-half and two-thirds of the solar energy stored in agricultural crops is in the leaves and stems. This is a termendous source of energy. When plant stems and firewood are burned directly, however, the thermal energy utilization rate is only 10 percent. Not only is a large amount of energy wasted, but a large amount of organic fertilizer is also destroyed. If the direct burning of the stems is changed to combustion to produce methane gas, many birds may be killed with a single stone. There will be numerous advantages. The first is that the thermal energy utilization rate will be increased several times over. It is estimated that about 300 million tons of plant stems from agricultural crops are burned annually in rural villages. This, plus accumulated animal dung and human feces, is capable of producing 100 billion cubic meters of methane gas, enough to supply the fuel requirements of rural villages throughout the country, with some to spare. Experience in some places has demonstrated that the methane gas produced by a 10-cubic-foot methane pit would be sufficient to supply one household of a commune member with his fuel needs for cooking and illumination, and the cost of construction of the pit would amount to only 40 or 50 yuan. A smaller one could be built for somewhat more than 10 yuan, which is affordable. Secondly, the thermal energy of methane gas can be converted into mechanical and electrical energy to solve part of the difficulties occasioned by a shortage of petroleum for fuel and electric energy in rural villages. The mixing of methane gas with diesel oil to operate internal combustion engines could effect a 70-percent saving in diesel oil. Third, after crop stems and leaves have fermented and decomposed, they may be returned to the fields. Not only do they contain nitrogen, potash, and phosphorous--the plant nutrients--but they also contain an abundance of humus. Their fertility is much higher than if they had been directly returned to the fields or burned to ashes and returned to the fields. Fourth is the hermetic processing in the methane pit of contaminated water and human and animal dung, which helps improve environmental sanitation and prevent the transmittal of diseases. Use of methane gas has already advanced from the experimental stage into the stage of qualified use. In places where it is working well, problems of a shortage of firewood for burning have been largely ameliorated. Though some difficult technical problems still await further research (such as fermentation at moderate temperatures), and though the time has not yet come for full promotion, nevertheless, the future of methane gas is already certain beyond any doubt.

Construction of small hydroelectric stations. Our country has abundant water power resources. We stand first in the world in this regard, but only [illegible] percent of these resources that could be developed have been developed. Switzerland is a country in which waterpower resources have been put to full use, with a utilization rate of more than 98 percent. During a recent inspection trip in Switzerland, we saw that small electricpower stations had been built at Lake Geneva where the drop is not very high, and at the ends of bridges where the current flowed fairly fast. In some rural villages, small power stations had been built on narrow creeks to supply the needs of the several farmer families in the area. In our country, too, there is an abundance of small streams that could be used as waterpower sources to supply electricity, but their rate of utilization is only 4.2 percent. A vast potential remains. Small hydropower stations require small investments and get quick results. Construction on river tributaries and mountain streams and diversion ditches can all be handled using "self-construction, self-management, and self-use" methods, with adaptation of methods to local conditions, in order to satisfy the needs of rural villages for electric power in their funds, locals should give priority consideration to their energy problems and build, according to the local resources available, either small hydropower plants or small coal mines, provided they do not destroy major mineral resources. The energy situation has to be faced. Simply setting up shop to operate large and inappropriate things only intensifies the energy shortage.

Use of solar energy. Most regions of our country have a long period of sunlight. Two-thirds of the country get more than 2,000 hours of sunlight annually, so there are great prospects for the use of solar energy. Solar heaters may be used to heat water and cook food, and solar-powered dryers may be used to dry grain. Solar energy may be used to grow plants, to heat pens for the raising of hogs, and to electrify cattle pens. If a farm family has a solar stove with 2.5 square meters of solar collection surface, the annual amount of heat collected will be equal to 600 kilograms of raw fuel--enough to solve their fuel problems for cooking. At the present time, however, throughout our entire country there are only somewhat over 60,000 square meters of solar collecting areas for hot water devices operated by solar energy. This is really too little. Additionally, in some places, wind energy and geothermal energy hold possibilities for development.

Building of firewood forests. The farmers need firewood and construction materials, and they also like to beautify their environment. They very much want to grow trees for forests. The key is proper policies. Policies have to be made somewhat broader and somewhat more flexible, with the mountains, slopes, or deserts and beaches designated for the personal use of commune members to plant trees to the creation of forests which, like the "four side" groves (beside houses, beside villages, beside roads, beside the water), will be the personal property of commune members in perpetuity. The autonomy of production teams in operating forest industries must be respected, in keeping with the policy of what is created by the state belongs to the state, what is created by communes and brigades belongs to communes and brigades, and what is created by individuals belongs to individuals, so as to arouse the enthusiasm of the farmers to plant trees for the creation of forests. This will bring striking benefits in 3 to 5 years at a minimum or 7 to 8 years at most. When there are a lot of trees owned by individual commune members, this will be advantageous to the development of forests by the state and the collective.

A solution to the problem of rural energy requires the cooperation of industry. Industry exists to serve agriculture and to bring about the technical transformation of agriculture. It cannot simply manufacture tractors and chemical fertilizer, but it must conscientiously study the pressing needs of agricultural production and the farmers' livelihood, thereby determining the direction of its own production. Applied to a solution of the rural energy problem, this means that cement and pipes will be needed to produce methane; for the construction of small hydropower stations, small generators will be needed; for solar energy, solar collectors will be needed; and all of this will require the aid of industrial enterprises for a solution. Given the existing industrial base in our country, all that is needed is to set a proper course and diligently follow it; then it will not be difficult to gradually solve the problems.

To solve the rural energy problem, there must be both a broadening of sources of income and a reduction of expenditures. Right now the firewood-burning stoves and coal-burning stoves in some places could, Through scientific improvements, be made to consume much less fuel. The main reason why many communes and brigades have increased output without increased income, or even increased output with decreased income, is the waste of energy resources in rural production. In the process of the modernization of agriculture in our country, the manufacture of various farm machines and tools must seek to reduce energy waste. Needed reforms must be undertaken in traditional agricultural techniques, with consideration being given to energy savings. Unless this is done, the modernization of agriculture will encounter many difficulties. Furthermore, the consumption of energy by the majority of rural communes and brigades is currently very high, with much of their equipment being old and ailing "coal tigers," "oil tigers," or "electricity tigers" that consume a great deal. Of course, it would be very difficult for enterprises in communes and brigades to undertake large-scale replacement of equipment right now. But in terms of long-term development, the consumption of energy is a problem that simply has to be considered. One way is, when choosing the direction of development, to select products that consume little energy. Another way is to constantly replace equipment as technology advances. This is a problem of overall technological policy, and not one that is exclusive to rural commune and brigade enterprises.

In the course of human history there have been two major changes in energy. One was the change from grass and trees to coal, and the other was the change from coal to petroleum. The petroleum crisis has sounded an alarm for the people. Presently, industrially advanced countries spend very large sums of money to find ways both to conserve energy and to reduce the consumption of energy. They are actively researching renewable energy resources (plant energy, solar energy, wind energy, and ocean energy) and nuclear energy in an effort to make a third change in energy. This is a profoundly significant exploration. It may be said that unless this change is made promptly, the world economy and the entire civilization of modern man will face an unimaginable situation. In our modernizations we must take a long-term view, placing energy problems in an important position and giving them the earliest attention. The solution to rural energy problems must also be considered in this context.

9437
CSO: 4007

NEW AGRICULTURAL ENGINEERING COURSES NEEDED

Beijing GUANGMING RIBAO in Chinese 19 Jul 80 p 2

[Article by Sun Jun [1327 6874]: "Institutions of Higher Learning Should Quickly Establish New Specialties in Agricultural Engineering"]

[Text] Recently the Education committee of the Chinese Agricultural Engineering Society held a conference at Shenyang attended by specialists and teachers from 16 agricultural and industrial institutions of higher learning. They borrowed from foreign experiences with the realities of our own country in mind, proposing further development of special education in agricultural engineering.

The specialists felt that the modernization of agriculture actually has as its essential ingredients modern biological science, modern engineering science, and modern management science for the constant armament of agriculture to increase the process of development of agricultural productivity. Without the development of agricultural engineering science and technology, modernization of agriculture is impossible, and the development of agricultural engineering science and technology is dependent on the quantity and quality of specialists. Though our country has trained a large number of specialists in agricultural engineering during the past 30 years, we are still a long way from meeting the needs of the modernization of agriculture. Mostly, the variety of specialties is incomplete. The scope of learning provided by some specialized instruction in agricultural engineering is too narrow. Heavy industry is emphasized and agriculture is slighted. Some agricultural specialists rarely teach agricultural engineering. At the present time, agricultural engineering consists of civil engineering, mechanical engineering, structural engineering, energy engineering, from materials processing and handling engineering, systems engineering, etc., while in our country the special courses in agricultural engineering that institutions of higher learning have set up include only farm machinery design and manufacture, farm mechanization, water conservation for farmlands, hydraulic construction, and agricultural electrification. Other specialities--such as agricultural construction, agricultural energy, and soil utilization--are all gaps.

Everyone acknowledges that in order to meet the developmental needs of the modernization of agriculture, it is necessary to establish at once various new specialties in the field of agricultural engineering. Most of the agriculture and farm machinery institutes in our country presently have the rudiments of farm machinery and farm mechanization in their specialty curricula. Some institutions of higher learning have basic courses in farmland water conservancy and agricultural electrification. All that these schools need is more qualified teachers, equipment, and teaching materials to provide the conditions for the creation of new specialized courses in agricultural engineering.

In the course of discussions, everyone acknowledged that inasmuch as the basic situation in each school is different, there should be unified arrangements, with consideration for all concerned, when setting up new specialities. The long range and the short range should be combined, with the pressing needs of the present being paramount, but without any adherence to a single pattern. The specialists felt that the agricultural engineering specialties for which training is currently needed urgently are the following:

1. Agricultural construction and environmental engineers. Such graduates should be able to handle the various structures required for agricultural production in the growing of crops in areas under environmental protection, livestock factory farms, cold storage for farm and animal products, and cattle sheds and pens as well as environmental control installations, construction of rural houses, and planned project design, construction, and management for residential areas.

2. Rural energy engineering. Graduates should have a grasp of the basic principles of thermal energy and should be able to undertake the design, construction, and management, as well as techniques, for the conservation of petroleum and electricity, involving the development and use in rural villages of small hydroelectric stations, methane gas, thermal heat, solar energy, and windpower.

3. Land use engineering. Graduates should be able to handle planning for the rational use of land and the building of farmlands, and surveying, designing, and construction of projects for farmland water conservancy, soil improvement, and preservation of water and soil.

4. Agricultural engineering. Graduates should be able to handle overall planning for comprehensive projects in agriculture and cattle raising, the design and construction of models for project equipment, and comprehensive technological and economic analysis.

5. Agricultural materials processing and treatment or disposal engineering. Graduates should be able to handle the design, construction, and management of processing and treatment or disposal projects for agricultural and animal products, seeds, and agricultural waste.

The agricultural engineering specialists felt that the need for the above categories of personnel during the next 10 or 20 years would be no less than the number of personnel needed in agriculture, agricultural mechanization, and farmland water conservancy. They earnestly hoped that agriculture and farm machinery units and schools would make the fullest use of their individual advantages and conditions to take up the task of developing new specialties in agricultural engineering in order to meet the needs of modernization of our country's agriculture.

9432
CSO: 4007

WATER CONSERVANCY MINISTER INTERVIEWED ON FLOODING

OW191340 Beijing XINHUA in English 1313 GMT 19 Sep 80

[Text] Beijing, 19 September (XINHUA)--Despite heavy torrents this year, the main course of China's largest river, the Yangtze, has been safe, Qian Zhengying, minister of water conservancy, said in an interview with XINHUA. The level of the river has now fallen below the warning line, except in a few places.

She said the dykes protecting the Yangtze and its major lakes, including the Dongting, Boyang, Honghu and Chaohu lakes, had stood firm, but flooding caused by breaches of smaller dykes and accumulation of rain water on low-lying land following the heavy rains was quite serious. Mountain torrents also caused damage in some areas.

The minister estimated that in Hubei Province, which was the worst hit, 370,000 hectares of farmland were seriously affected. Other provinces along the middle and lower reaches of the Yangtze were also affected in varying degrees.

However, the important cities of Wuhan, Jiujiang, Wuhu, Nanjing and Shanghai, and vast plains along the river were protected, the minister said. Industrial production and rail traffic were not interrupted.

Describing the flood-prevention work carried out along the Yangtze, Minister Qian Zhengying said that in Hubei Province alone over one million people were alerted to guard the dykes along the main course and tributaries, and to drain off surplus water from low-lying land.

In Hunan Province, 700,000 people protected the dykes round the clock in shifts. When the Lishui tributary rose high, 160 kilometers of small dykes were quickly built on top of the main river dykes, thus safeguarding farmland.

Large numbers of people, helped by army units, were mobilized for flood prevention in other provinces and Shanghai municipality.

Weak dyke sections that showed signs of seepage were quickly repaired, the minister said.

She said that this year the Yangtze high water season set in earlier than usual and the high levels lasted longer. From early June to late August, 550 to 900 millimeters of rainfall were registered in most parts of the Yangtze basin, in places exceeding 1,000 millimeters. This was 50 to 70 per cent more than normal. August rainfall in the Shanghai area was three times that of normal and the heaviest in 107 years.

The minister said that on 2 September, the water level reached 27.76 meters at Wuhan, at the confluence of the Yangtze and its biggest tributary, the Han River. This was the third highest watermark since 1865, when records began to be kept.

CSO: 4020

FARMLAND SHORTAGE FEARED BECAUSE OF HOUSING CONSTRUCTION

Hebei Province

Beijing RENMIN RIBAO in Chinese 22 Jun 80 p 2

[Article by Feng Shouxian [7458 1363 0341] and Li Mingfu [2621 2494 4395], Luannan County, Hebei Province: "Build Houses Without Taking Away Too Much Farmland"]

> [Text] Editor's Note: A big population with limited land, and still less farmland, is a prominent contradiction facing us in modernization. We should cherish farmland as an important resource of our country. For a long period, this problem has not been solved very successfully. Should anarchy be allowed to go on in the control and use of the land, certainly it would make our limited farmland increasingly less available. The consequences would be too obvious to imagine. The leadership at all levels should grasp the economical use of land as a major issue. It is necessary to carry out unified planning and make rational arrangements. They should, according to the stipulations of relevant policies, enforce a strict procedure of examination and approval. In all cases of arbitrary seizure of land, no matter who you are, whatever should be put under control must be put under control, and whatever should be checked must be checked.

In recent years, the development of commune-run enterprises has been very fast everywhere, making it necessary to expand or build factory workshops and dormitories. With the continuous rise in the living standard of rural commune members, more and more individuals are building new houses. All these are good things. However, what deserves our attention is that more and more farmland has been seized by commune-run enterprises and commune members for house construction. According to statistics, in our [Luannan] County, during the 4 years from the latter half of 1975 to June of last year, the area of farmland was reduced by 28,500 mu, constituting 2.6 percent of the total farmland area of our county. Of this amount, only 4,100 mu were used for the construction of water-conservancy projects, while the remaining more than 24,400 mu were used by various units (mostly commune-run enterprises) for capital construction and by commune members for building their houses. The seizure of land is not always justified in every case; the main problem is either in "applying for land liberally and using it sparingly" or in "seizing more land than what has been approved." For instance, according to the population and scope of rural communes in our county, it should be sufficient for a commune supply-marketing cooperative to occupy some dozen mu of land; however, some cooperatives have taken more than 20 mu. The commune tractor stations have generally only 6 or 7 tractors, for which 5 or 6 mu of land should be enough; however, some stations occupy 10 to 20 mu. A certain commune brick workshop has taken away more than 200 mu of farmland. When these units seized more farmland than necessary, some of them raised grain and vegetables on the land left over from capital construction. The commune members expressed great dissatisfaction with this, and relations between these units and the commune members became very strained.

As for the building of houses by rural commune members, some commune members with vacant land around their houses expanded their construction of new houses onto the farmland to get more space. Our provincial departments concerned have made a rule that in construting a house of three main rooms, a maximum space not exceeding 0.35 mu of land is allowed; however, most peasant households have built new houses by occupying 0.4 to 0.5 mu, or even 0.6 to 0.7 mu, of land. At present, most commune members build houses for a single family, but the foundation area for each house extends as much as 30 to 40 meters.

Our county party committee and county revolutionary committee have paid great attention to this problem. To solve the practical problem of too much farmland being taken away, they organized investigation groups and conducted a general inspection, with the cooperation of communes and production teams concerned, and requested that all land taken away unnecessarily should be returned and must be returned to the production teams. After this was done, all commune members were satisfied. A suggestion was then made to all places that an inspection should be conducted into the seizure of farmland by the commune-run enterprises and by commune members for building houses, in order to solve properly any case of seizing too much farmland or occupying farmland with permission.

Sichuan Province

Beijing RENMIN RIBAO in Chinese 22 Jun 80 p 2

[Article by Xiao Xing [2556 1380], Nanchong Municipality, Sichuan Province: "Leave More Farmland to Our Future Generations"]

[Text] Our Nanchong Municipality is situated on a flat embankment close to the banks of the Jialing River, with fertile soil and a rich source of water. As irrigation is convenient, the output of agricultural crops is high. One mu of land can be used for more than 3 mu of hilly land. In the suburbs, the land is mostly used for growing vegetables for 200,000 people to consume. In the past 2 years, however, many units have built offices, factories, warehouses, hotels, and dormitories, and have occupied a great deal of suburban fertile land. A stretch of land once planted in vegetables now has tall buildings standing in the middle of the farmfields. The people ask: If thing go on like this, what can our future generations live on? Of course, only a few li away from the suburbs is low, hilly land where houses could have been built with good planning. Thus, not only the fine fields but also the production base for vegetables could have been preserved, so that there would be no shortage of vegetables for people in the city to eat. This is our appeal: control the land, preserve the fine fields and the fine soil, and leave more farmland for our future generations!

9038
CSO: 4007

BRIEFS

EARLY HARVEST, LATE CROPS--Under conditions in which the summer grain and early rice had a reduction in output because of disasters, our country's broad masses of rural cadres and commune members must try by every possible means to strengthen the late period management of the late autumn crop and work hard to have the autumn harvest make up for the summer harvest so that a good harvest is obtained this year. Because of the unusual weather this year, agricultural crops have remained green and ripened late; all areas in the north are now adopting every kind of measure to promote early ripening in order to avoid the dangers of an early frost. The double-cropped late rice in the south is now in the heading stage. This year the south had long periods of low temperatures and lots of rain during the summer which delayed the harvest of the early rice and made the transplanting period for the late rice later than last year. This year the amount of late rice which was transplanted after "autumn begins" [7 August] was 10 percent more than that in 1979 and the area transplanted to late rice was reduced by 5 million mu compared to 1979. Because of the late transplanting, the effective tillering and vegetative growth periods have been shortened with the results that the crop may encounter the cold dew wind which would reduce the output of late rice. Because of this, all areas must adopt countermeasures and strive for a good harvest of late rice. At present growing conditions for cotton in the northern cotton areas are good. In the southern cotton areas, because of long periods of rain, low temperatures and insufficient sunlight, the number of cotton bolls formed before and in June was reduced compared to 1979. While protecting the grain, all areas in the south must also strengthen their management of cotton fields. [Text] [Beijing RENMIN RIBAO in Chinese 19 Sep 80 p 1]

SPRING SILKWORM COCOONS--China reaped another bumper harvest of spring silkworm cocoons this year after achieving one last year. As of July 20, 7.15 million dan of spring cocoons had been procured by the State, an increase of 19 percent over the same period of last year and a record high since the founding of New China. This year all major silkworm cocoon producing areas registered substantial increases over last year. Sichuan scored a 27 percent increase, Zhejiang 13 percent, Jiangsu 29 percent, Guangdong 11 percent and Shandong 8 percent. Many areas produced more than 100 jin of spring cocoons from each sheet of silkworm eggs. [Beijing RENMIN RIBAO in Chinese 13 Aug 80 p 2]

NITROGENOUS FERTILIZER STABILIZING AGENTS-- Since 1969, China has been conducting research on more than 30 stabilizing agents for nitrogenous fertilizers. It has now been affirmed that two agents, 2-chlor-6 (trichlormethyl) pyridine and guanyl thiourea, are outstanding low-toxic stabilizers that dissolve in the soil without creating any pollution problems. [Beijing RENMIN RIBAO in Chinese 13 Aug 80 p 2]

CSO: 4007

BRIEFS

ANHUI PREFECTURE FLOODED--From mid June to late August, Anqing prefecture in Anhui was hit by continuous heavy rains and rainstorms. As a result, 399 large and small dikes burst, and some 400,000 mu of farmland was flooded. On 30 August, the Anqing prefectural party committee called an enlarged meeting of its standing committee members to study necessary measures to cope with the situation. At present, some 300,000 people are working daily to combat flood and do whatever possible to insure the safety of the Changjiang River dike. [Hefei Anhui Provincial Service in Mandarin 1100 GMT 6 Sep 80]

CSO: 4007

VICE MAYOR URGES CITY RESIDENTS TO PLANT TREES

OW191258 Beijing XINHUA in English 1227 GMT 19 Sep 80

[Text] Beijing, 19 September (XINHUA)--Ye Lin, vice-mayor of Beijing, today urged city residents to plant trees wherever possible so as to make Beijing into the clean and beautiful city called for earlier this year by the secretariat of the Central Committee of the Chinese Communist Party.

He was speaking at a meeting held to commend work units which have done best in planting trees and greenery. They include 62 factories, schools and neighbourhood community centers.

According to Beijing's municipal bureau of parks and gardens, city districts this year planted 690,000 trees and 640,000 square meters of plants and shrubs.

There has been a noticeable improvement on major streets and public places, especially Changan Boulevard, Qiansanmen Street parallel to Changan, and in the western city district.

Factories have also made great efforts to improve their environment. Beijing Electronic Tube Factory, for example, has planted 12,000 trees and 15,000 square meters of other plants in the last 2 years, and the capital iron and steel complex and the No 2 chemical works have also done well.

The Beixinqiao neighbourhood community center, in the northeastern part of the city, has planted trees in all the small lanes in its district, and 96 per cent of the local open spaces are covered with plants. Within the 2.25 square kilometers under its administration, there are 50,000 trees and a number of lawns and flower beds.

The vice-mayor called on all citizens to learn from these units and continue to use every bit of space to plant trees and flowers.

According to the municipal bureau of parks and gardens, the city's remaining 700 hectares of bare land will be planted with trees in 3 years, and not less than 25 per cent of the old part of the city and 30 per cent of newly-built areas will have grass and plants.

CSO: 4020

BRIEFS

BEIJING VEGETABLE PRICE HIKES--According to a report of "Shichang Bao" [Market News] published on 9 September, vegetable prices in Beijing for the first half of 1980 increased more than 30 percent as compared with the corresponding period in 1979. According to the city statistical bureau, the sales volume of vegetables in the first half of 1980 decreased by 32.53 million jin while total sales rose by 14.56 yuan as compared with the same period last year. In another words, the residents in the Chinese capital paid an additional 16 million yuan for vegetables. It should be recalled that last year the city leadership promised no vegetable price hike. However, this promise has not been kept and the masses are obviously discontented. [OW161317 Beijing Domestic Service in Mandarin 2230 GMT 9 Sep 80]

BEIJING RURAL WORK MEETING--The Beijing Municipal CCP Committee held a meeting on rural work on 28 August. The meeting said: It is necessary to eliminate the remnant poison of the ultraleftist line pushed by Lin Biao and the gang of four. We must redress all the peasants who have been wrongly criticized. One of the aims of this meeting was to bring the superior position into play and speed up production and enrich the rural areas as soon as possible. The meeting proposed: It is necessary to encourage and support domestic sideline production. Production teams must help peasants raise domestic animals and should not interfere with planting on the peasants' private plots. It is possible to divide deserted areas for peasants to cultivate in order to improve their standard of living. [HK170649 Beijing City Service in Mandarin 2300 GMT 31 Aug 80]

CSO: 4007

BRIEFS

GANSU GRAIN AND OIL PROCUREMENT--At the recent government-sponsored telephone conference on procurement of summer grain and oil-producing crops, Xu Feiqing, deputy provincial governor, called on governments at all levels to strengthen leadership over the procurement work of grain and oil-producing crops to mobilize cadres to whip up an upsurge in handing over grain and oil-producing crops to the state. He also called for efforts to keep sufficient good grain for commune members and seeds for cultivation and not to purchase grain excessively. [Lanzhou Gansu Provincial Service in Mandarin 1125 GMT 22 Sep 80]

GANSU DESERT BOTANICAL GARDEN--Lanzhou, 19 Sep (XINHUA)--China's first desert botanical garden on the southeastern edge of the Badain Jaran Desert in Minqin county, Gansu Province, has increased its species of desert plants to more than 100 and its area to 70 hectares. Among the species are tamarisk, yellow flower sea-lavender and saxaul. Imported Algeria calligonums and cucurbita foetidissima thrive in this area hit by frequent sandstorms. China's deserts and sandy and gravel areas cover 1.2 million square kilometers, an area larger than its farmland. The garden, set up in 1974, has begun providing seeds and saplings to other counties and provinces to transform deserts. The plants have been grown in farming areas to intercept shifting sand and prevent the sand from being pushed southward by winds to encroach upon farmland. Many Chinese scientists have come to the garden for scientific research. [Beijing XINHUA in English 0717 GMT 19 Sep 80]

CSO: 4020

GUANGDONG

ENTERPRISES RUN BY PRODUCTION TEAMS ENCOURAGED

Guangzhou NANFANG RIBAO in Chinese 2 Jul 80 p 1

[Article: "A Cart Pulled by Three Horses Is Faster Than One Pulled by Two Horses"]

[Text] Editor's Note: 'Pulling with three horses is faster than pulling with two horses.' Industries managed by three levels of the commune will develop the collective economy faster than those managed by two levels. This should be very clear. During the 10 years of unrest, however, production teams were not allowed to operate enterprises. If they went ahead with it, they were accused of causing problems of direction and path. The Nanhai County Party Committee decided to get in touch with reality and thoroughly eradicate the residual poison of the extreme leftist line. A great effort was exerted to promote production team enterprises. This is an important measure to make the farmers rich as quickly as possible. The experience of that county is meaningful and should be generally extended.

When a production team does a good job of producing grain, it is proper for it to develop economic crops and animal husbandry according to the condition of the land. The practice of Nanhai County and many others demonstrates that production teams still have a great untapped potential. Aside from developing economic crops and animal husbandry, it is entirely possible for them to operate auxiliary industries, and some of them may also manage commerce. In that manner, the surplus labor of rural villages may be better organized to increase income so that the brigade may have more capital to support agricultural production, and the level of distribution of the members may be raised faster as well.

Of course auxiliary industries cannot be operated by production teams blindly. The industries should be

> suitable for the locality, enhancing its advantages and avoiding its shortcomings, in order to guarantee the greatest possible economic effect. But in the process of promoting production team auxiliary industries, the industries of the commune and the brigade should not be neglected, either. Industries at the three levels should have a division of labor so as to let each have its place, to benefit one another, and to promote one another. Since early this year, auxiliary industries operated by production teams of Nanhai County have developed very fast, while the enterprises of the communes and brigades of the county have also continued to develop. This fact proves that the system is entirely possible.

Correspondent Zou Canhua [6760 3503 5478] reports: Auxiliary industries operated by production teams in Nanhai County are flourishing like spring bamboo shoots after a rain. At present, more than 1,600 of the 3,070 production teams in the county are operating auxiliary industries. Some of these are operating commercial ventures as well.

Of those teams that operate industries, more than half are new at this enterprise and an additional 168 teams are planning to start. The industries operated by those teams include mainly light hardware, light chemicals, construction materials, braiding and weaving, transportation, processing of agricultural byproducts, food and beverage service, etc. There are more than 100 industrial products among them, and some are selling very well in domestic and foreign markets. From January to May this year, the total industrial income of communes and brigades of the county reached 94 million yuan, an increase of 29.4 percent over the same period last year. The many enterprises of the production teams add one more powerful force to the county's auxiliary industries.

The Nanhai County Party Committee had to undergo a learning period before the production teams were allowed to operate auxiliary industries. During the period of the "four pests," and for a period of time after the "gang of four" was smashed, the industries started by the production teams were all forcibly taken over by the brigade to implement the so-called "five unities," and the production teams were not allowed to operate auxiliary industries. Later, when "unity" did not seem to be enforceable, production teams were permitted to operate some scattered handicraft industries during the slack season at the farm. In the latter half of last year, the county party committee Production teams were positively encouraged to operate auxiliary industries to seek an overall development of agriculture, industry, and auxiliary industry in a form of comprehensive operation. Consequently, good results were obtained within a very short period of time. A good example is Xiaotang Commune. In 1978, the personal distribution of that commune ranked third in the county. Last year, it leaped to first place in the county, to 284 yuan, an increase of 75 yuan over that of 1978. The secret is an accelerated development of team-operated auxiliary industries. Last year the total income of auxiliary industries operated by production teams of that commune (including money appropriated to the teams by the brigades) reached 9,250,000 yuan, an increase of 41.2 percent over 1978. This commune had the greatest range of increase in the entire county. Since the beginning of this year, the auxiliary industries operated by production teams in Xiaotang Commune have continued to grow. The Liansha Brigade of this commune has 15 production teams, not a single one of which had any auxiliary industry in the first half of last year. Now, all 15 production teams have started auxiliary industries, causing income to increase on a great scale. In the first 5 months of this year, the total industrial income of that brigade reached 1,080,000 yuan, an increase of 2.4-fold over the same period last year.

The leaders of the Nanhai County Party Committee look back at the process of developing auxiliary industries operated by production teams and comment with profound understanding that the more thoroughly the extreme left was criticized, the more liberated the thinking became and the faster the team-operated industries developed and the famers' level of wealth increased. The cadres and membership masses of the basic level of the rural villages also noticed from practice that operating auxiliary industries by the three levels of commune, brigade, and production team is favorable for the overall development of agriculture, industry, and auxiliary production. It is a road of comprehensive development of agriculture, industry, and commerce and is favorable for promoting rural villages to early and quick riches. They all said happily: "A cart pulled by three horses is faster than one pulled by two horses. There is hope that the farmers will be rich quickly."

6168
CSO: 4007

BRIEFS

AGRICULTURAL MANAGEMENT--Based on a resolution of the Guangzhou Municipal Party Committee concerning the conversion of the Municipal Bureau of Farm Management from an executive management organization to an enterprise-type general company, the Guangzhou Municipal Agricultural, Industrial, and Commercial Joint Company was established yesterday. This company and the Municipal Bureau of Agriculture are to operate under two signboards with one set of personnel to carry out enterprise management and system regulation. The Guangzhou Municipal Agricultural, Industrial, and Commercial Joint Company will have 2 companies and 10 farms under it, with a total of 27,500 state employees and 18,000 agricultural workers belonging to the collective ownership system. Its land totals 154,000 mu. Its total agricultural-industrial production last year totaled 74,360,000 yuan. Following the establishment of the joint company, its subordinate agricultural and animal farms and fruit orchards were organized into agricultural, industrial and commercial joint enterprises, as certified by the Municipal Party Committee late this month. These are the Jiufu Agricultural, Industrial, and Commercial Joint Company; the Minle Agricultural, Industrial, and Commercial Joint Company; the Yuanyi Agricultural, Industrial, and Commercial Joint Company; and the Municipal Agricultural, Industrial, and Commercial Joint Enterprise Supply and Sale Company. According to a related State Council regulation, the Guangzhou Municipal Agricultural, Industrial, and Commercial Joint Company has unified leadership over the persons, wealth, materials and supplies, and sales of its subordinate units. This gives greater production autonomy to its basic-level units, and makes the municipal farms the foundation of production of auxiliary foodstuffs in Guangzhou City. [Text] [Guangzhou NANFANG RIBAO in Chinese 29 Jun 80 p 1]

GUANGDONG AGRICULTURE MANAGEMENT--To further mobilize the peasants' activism in production, Guangdong Province has decided to readjust the classification management of agricultural and sideline products. The 47 categories of agricultural and sideline products have been simplified into 20 categories. After readjustment, the state monopoly for the purchasing and marketing of agricultural and sideline products will include grain, edible oil and oil-bearing crops. The second category products which are being changed to third category products include chicken, ducks, geese, fresh eggs, fresh pepper, lychees and medicinal herbs. [Guangzhou Guangdong Provincial Service in Mandarin 1120 GMT 7 Sep 80]

CSO: 4007

BRIEFS

GUIZHOU COUNTY AGRICULTURE--In 1979, Meitan county, Guizhou, reduced wheat acreage to 68,000 mu from 112,000 mu of 1978. Thanks to its proper management, per-mu wheat yield of that year was 40 jin more than the previous year. Rape acreage increased to 134,000 mu from 120,000 mu of 1978. This year, the county reaped a bumper harvest of rapeseed and procured more than 19 million jin of rapeseed, topping 1978 by more than 80 percent and more than doubling the previous record. Although this year the county has reduced grain output and resultant income by 2.25 million jin and 300,000 yuan respectively, it has increased rapeseed output and resultant income by more than 8 million jin and 4 million yuan respectively. As of now, Daozhen county has planted more than 60,000 mu of tong trees, totaling more than 2.4 million sticks. In 1979, the county's income from economic forests and diversified economy reached 19 million yuan, accounting for 55 percent of the total agricultural output value. [Beijing Xinhua Domestic Service in Chinese 3 Sep 80]

CSO: 4007

HEBEI

BRIEFS

HEBEI WHEAT PLANTING CONFERENCE--On the evening of 26 August, Hebei Provincial CCP committee and people's government held a telephone conference to urgently mobilize the masses for combating drought and wheat planting. Governor Li Erzhong stressed the great political and economic significance of this task in stabilizing the situation in the province. He put forth the following specific demands: 1) Insist on collectivism and do not allow individuals to go their own way; 2) Have a detailed plan for cultivation areas for wheat, cotton, oil-bearing crop and other economic crops. When there is a conflict between wheat and cotton, cotton should be given priority; 3) Develop irrigation construction; 4) Sum up experiences to achieve high quality in wheat planting; 5) Institute and improve the system of responsibility for wheat production, particularly with regard to combating drought and planting wheat. This is to be flexibly implemented according to local conditions and after consultations with the people. In production teams where drought is serious and great difficulties are encountered, work teams taking specific responsibilities can be organized. CCP committees at all levels are urged to attach prime importance to this task. [Shijiazhuang Hebei Provincial Service in Mandarin 0430 GMT 29 Aug 80]

CSO: 4007

BRIEFS

HEILONGJIANG SUGAR REFINERY--The Acheng Sugar Refinery in Heilongjiang Province began production 21 September, 5 days earlier than scheduled. Hou Jie, deputy governor of the province, inspected the refinery 22 September. The refinery is expecting to harvest more than 330,000 tons of beet crops this year, doubling last year's production. It will be able to process 1,500 tons of beets per day beginning 24 September. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 22 Sep 80]

HEILONGJIANG FARM MECHANIZATION CONFERENCE--The Heilongjiang provincial work conference on farm mechanization and reclamation sponsored by the Heilongjiang Provincial Party Committee and the Provincial People's Government convened 22 September in Harbin municipality. The main tasks of the conference are implementing the guidelines of the third session of the fifth NPC, receiving instructions by leading comrades of the state council to our province and directives on building marketable grain bases, summing up work experiences, discussing the 1981 farm mechanization and reclamation plan and setting forth a 5-year program. Wang Luming, deputy secretary of the Provincial Party Committee and deputy governor of the province, addressed the conference. He said: The state council decided to build our province into a national marketable grain base and expected us to achieve commune-level farm mechanization, reclaim 2.5 million mu of wastelands and hand over 5 billion jin of marketable grain to the state by 1985. [Harbin Heilongjiang Provincial Service in Mandarin 1100 GMT 22 Sep 80]

HEILONGJIANG MARSHLAND RECLAMATION--Beijing, 18 Sep--Experiments in using wells to drain or irrigate the marshland in Heilongjiang's Sanjiang Plain have been successful, thus laying a scientific foundation for building marketable bases in China's northeastern region. The plain is China's largest marsh area, covering some 30 million mu of wasteland. Since 1974 the Chinese Academy of Sciences' Changchun Geographical Institute and the concerned department in Heilongjiang have started to use this method in transforming marshland. In case of waterlogging, the excessive water can be drained into the wells; in case of drought, well water can be used for irrigation purposes. [Beijing Xinhua Domestic Service in Chinese 0131 GMT 18 Sep 80]

HEILONGJIANG COUNTY WHEAT OUTPUT--Keshan county, Heilongjiang Province, reports a 10 percent increase in average unit yield this year from its 1 million mu wheat fields. The county had 810,000 mu of wheat in 1979 when there was also a 10 percent unit yield increase over the previous year. The continuous growth in wheat production owes to the expansion of farm mechanization which is now the basic farming method for 57 production brigades. [Beijing Domestic Service in Mandarin 0400 GMT 7 Sep 80]

CSO: 4007

BRIEFS

HENAN MARKETABLE FISH--Zhengshou, 19 Sep (XINHUA)--The State Aquatic Products Bureau has decided to build fishery freshwater bases in municipalities and counties of Henan Province along the Huanghe River. In the past 2 years, pilot bases have been built on the outskirts of Zhengzhou, Kaifeng and Luoyang municipalities and in Lingbao, Zhongmou, Kaifeng and Minquan counties, comprising a total of more than 700 fish ponds and more than 7,000 mu of water area. [Beijing Xinhua Domestic Service in Chinese 0149 GMT 19 Sep 80]

TORNADO IN HENAN--The Henan Provincial CCP Committee and Provincial Government sent a comfort group to Gushi county after a tornado swept through 66 production teams on 24 August. The tornado caused serious losses both in lives and property. On 28 August the comfort group headed by vice chairman of the Provincial Civil Affairs Bureau (Xiao Zhang) and vice chairman of the Provincial Agriculture Committee (Feng Mingao) arrived in Gushi county from Zhengzhou. [Zhengzhou Henan Provincial Service in Mandarin 1130 GMT 10 Sep 80]

HENAN COUNTY COTTON ACREAGE--The 115,000 mu cotton in Xinxiang county, Henan Province, is growing better than last year's crop. Field management is stepped up as the crop reaches its late stage of growth. [Beijing Domestic Service in Mandarin 0400 GMT 7 Sep 80]

CSO: 4007

HUBEI

BRIEFS

INJECTIONS FOR CONTROLLING INSECTS--Park workers in Beijing have successfully controlled two varieties of insects that are harmful to willow trees and Chinese Scholartrees in some areas of Beijing by injecting oxidized demethoate into pre-drilled holes in the trunks of these trees. In one case, when two Chinese scholartrees were treated by this method, thousands of dead insects were found on the ground around the trees the following morning, and two days later, all harmful insects on these two trees were exterminated. [Beijing RENMIN RIBAO in Chinese 9 Aug 80 p 2]

CSO: 4007

HUNAN

BRIEFS

HUNAN LAKE FLOOD--Recently, due to continuous rain in the upper reaches of Changjiang, the water level of Dongting Lake rose again. In some areas, the water levels have reached a dangerous level. Some 400,000 mu farmland near the lake areas are waterlogged. The Hunan Provincial CCP Committee, the Provincial Peoples Government and the affected prefectures and counties have regarded resisting floods as their primary task. While resisting floods, the leadership in the affected areas have also paid attention to grasping the current production and doing a good job of autumn sowing and tending late rice. At present, the threat of flooding still exists in the Dongting Lake areas. [Changsha Hunan Provincial Service in Mandarin 2315 GMT 4 Sep 80]

CSO: 4007

JIANGSU

BRIEFS

JIANGSU AFFORESTATION WORK--Nanjing, 15 Sep (XINHUA)--Jiangsu Province has scored marked achievements in afforesting its plains in the past few years. As of now, the province has afforested 20 million mu of land on its plains. The aggregate timber reserve of trees planted near villages, along roads and streams and by houses has reached 10.98 million cubic meters or 75 percent of the province's total timber reserve. [OW180647 Beijing Xinhua Domestic Service in Chinese 0256 GMT 15 Sep 80]

JIANGSU SORGHUM--This year Sihong county, Jiangsu Province, has planted 100,000 mu of sorghum, a cereal used in making a Chinese wine. A local winery has already signed contracts with various communes for the purchase of this cereal. [Nanjing Jiangsu Provincial Service in Mandarin 2300 GMT 2 Sep 80]

COMMUNE INDUSTRIAL PRODUCTION INCREASED--The total value of goods produced by industries run by communes and production teams in Jiangsu for the first half of 1980 rose 53.4 percent compared with that of the same period of 1079. This amounted to 20 percent of the value of goods turned out by all the industries in the province. [Nanjing XINHUA RIBAO in Chinese 24 Jul 80 p 1]

NEW INSECTICIDES--Jiangsu has achieved good results in its research and production of high-efficiency, low-toxic insecticides under the joint efforts of local research units, institutes of higher learning and industries. As of now, 25 varieties of such insecticides, including biothion and phoziom, have been trial-produced, and 17 of them are being manufactured. Nearly half of the chemical insecticides produced in Jiangsu is of the high-efficiency, low-toxic varieties. [Nanjing XINHUA RIBAO in Chinese 15 Jul 80 p 1]

CHEMICAL FERTILIZER FOR AUTUMN CROPS--Over 380,000 tons of nitrogenous fertilizer for the autumn-ripened crops were delivered to production teams in Jiangsu during the first 20 days of July. Moreover, some 600,000 additional tons are stored in warehouses, ready for future use. [Nanjing XINHUA RIBAO in Chinese 26 Jul 80 p 1]

CSO: 4007

BRIEFS

JIANGXI RURAL ENTERPRISES--The Jiangxi Provincial People's Government held a telephone conference on the production of the commune- and brigade-run enterprises on 2 September. The conference called on cadres and workers of these enterprises to strive to fulfill this year's production plan and prepare conditions for a big boost in production next year. Wang Zhaorong, member of the standing committee of the Provincial CCP Committee and vice provincial governor, presided over and addressed the conference. It was disclosed at the conference that during the first 6 months of this year, the total output value of rural enterprises reached 583.4 million yuan, topping the same period last year by 9.6 percent. But the development was uneven. The conference adopted major measures for insuring the fulfillment and overfulfillment of the production plan. [Nanchang Jiangxi Provincial Service in Mandarin 1100 GMT 6 Sep 80]

CSO: 4007

BRIEFS

JILIN BEET HARVEST--According to statistics, the province's total output of sugar beet is expected to be more than 800,000 tons this year, an increase of 28 percent over that of the former best annual harvest. To enable the people to increase their income by the bumper beet harvest, Jilin Province recently held a work conference to study and work out measures on harvesting and delivering sugar beet as well as its storage. The conference noted: Our province still follows the old way to assign beet storage tasks to production teams, purchase stations and sugar refineries. However, production teams will be paid for their storage according to how well, how much and how long they store the beet. Every production team may draw in advance 70 percent of the payment it is to receive for storage. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 18 Sep 80]

JILIN FIRE PREVENTION CIRCULAR -The Jilin Provincial People's Government recently issued a circular on fire prevention. It states: During the autumn harvest, we must pay special attention to fire prevention since the weather is dry and electric appliances are in use everywhere. We should draw lessons from the Bohai No 2 oil rig incident and do a good job in safety so as to ensure that this year's bumper harvest results in increased income. [Changchun Jilin Provincial Service in Mandarin 1100 GMT 17 Sep 80]

JILIN MUNICIPAL MINOR HARVEST--According to statistics compiled by commercial departments, by 10 September, Jilin municipality in Jilin Province had procured 2.89 million yuan's worth of products of minor autumn harvest, amounting to 38.6 percent of its annual procurement plan. [Changchun Jilin Provincial Service in Mandarin 2200 GMT 20 Sep 80]

CSO: 4007

SHENYANG HOUSEHOLD GIVEN ASSISTANCE IN RAISING PIGS

Beijing RENMIN RIBAO in Chinese 27 Jun 80 p 1

[Report by XINHUA correspondent Liu Ce [0491 4595] and XINHUA reporter Liu Xin [0491 2946]: "Pig-Raising Household Su Yulan's Great Contribution"]

[Text] In Liaoning Province, the Xinchengzi Ward of Shenyang Municipality granted a loan of 6,000 yuan to female commune member Su Yulan, who has a special skill in pig raising, and helped her run a family pig farm with 10 pigsties, a feed-fermenting pool, and a motor-pumped well. This family pig farm now has 9 sows, over 10 piglets, and more than 30 big porkers. In addition, there are also 4 milch goats, 16 head of cattle, and 2 donkeys. Up to the end of May, she had sold to the state five big porkers, each weighing over 290 jin.

Su Yulan [5685 3768 5695] is a member of the No 6 production team of the Liuwang Brigade in the Xinchengzi Commune. She has received a secondary vocational education, shown keen interest in study and, with assistance from her husband, learned a set of scientific methods for raising pigs. The piglets sometimes weigh more than 250 jin 8 months after birth. Last year, she kept 50 pigs and sold 23 big porkers to the state, each weighing an average 253 jin. She was elected a good hand at pig raising.

To give full play to her skill, at the beginning of this year the Liuwang Brigade, where she was living, designated her home as an individual household specialized in pig raising, and asked her daughter, a middle-school graduate, to stay at home and help her mother keep pigs. To help Su Yulan solve the problem of greenfeed for the pigs, the production team assigned a feed plot of 3 mu to her home. Su Yulan signed a contract with her production team with the stipulation that this year her family would keep 100 pigs, sell 40 big porkers to the state with a gross weight of 10,000 jin, deliver 200 cubic meters of fine-quality manure to the production team, and pay the production team the accumulation of an average worker and the net income from the 3-mu plot. The leadership departments of Xinchengzi Ward also gave their positive support to Su Yulan in running her family pig farm well, granted her an interest-free loan of 6,000 yuan (to be repaid fully in 3 years) and, at the same time, even helped her acquire bricks, tile, cement, and timber to build the pigsties.

From the initial experience, it may be seen that the active development of such individual households specializing in animal husbandry is characterized by its limited investment and quick results, and that it is favorable to the state, to the collective, and to the individual. According to the contract, this year she will sell 40 big porkers to the state, approaching the total number sold by the entire production team last year. She will deliver to the production team 200 cubic meters of pig manure, about one-eighth the total amount of the whole team's pig manure.

The Xinchengzi Ward's practice of granting a loan in support of a commune member to become an individual household specializing in animal husbandry has been supported by the Liaoning Provincial Party Committee and the Shenyang Municipal Party Committee.

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CSO: 4007

BRIEFS

LIAONING AUTUMN JOBS--Since mid-September, Liaoning Province has been engaged in three autumn tasks--harvesting, plowing and sowing. According to incomplete statistics, the province has harvested 1.78 million mu of various crops, sown winter wheat on 6,995 mu of farmland and plowed 20,000 mu of farmland. [Shenyang Liaoning Provincial Service in Mandarin 1100 GMT 20 Sep 80]

LIAONING FORESTRY POLICY--The Liaoning Provincial CCP Committee and the Provincial People's Government issued a circular 28 August on readjusting the policy on forestry for eastern mountain areas. The circular noted that the state grain purchasing quotas should be reduced in hilly areas in the eastern mountain areas, and the state should purchase the timber produced by communes, brigades and collectives there at negotiated prices beginning in 1981. The circular also set forth regulations and demands in this regard: 1) Planting trees and building forests in the eastern hilly areas is encouraged so as to conserve water and soil. 2) State farms should guarantee the implementation of the state unified timber distribution plans and timber purchasing measures. 3) It is necessary to enliven the management of timber and wood products. 4) It is imperative to mobilize the masses to develop comprehensive utilization of timber. 5) CCP committees and people's governments at all levels should strengthen administration and supervision in forestry work to protect forest resources. [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 16 Sep 80]

CSO: 4007

BRIEFS

BREAD PRICES HIGH, QUALITY LOW--Recent letters from the masses have revealed that bread prices in Hohhot municipality continue to climb, but the quality of the bread continues to decline. Low-cost bread, costing 7 or 8 fen, has disappeared from the markets. Bread priced at 1 jiao is not always available. People usually can only find bread costing 1.6, 1.7, 1.8 or 2 jiao. Why is bread so expensive in Hohhot municipality? The main reason is high profits. Bread sold at and above 1.6 jiao can create gross profits ranging from 33 to 38 percent. For example, Hohhot's municipal bakery sold 760 tons of bread last year, earning 15,300 yuan in net profits. Its retail departments earned 13,800 yuan. In the first 8 months of 1980, the bakery sold 1,300 tons of bread, earning 26,800 yuan in net profits. Its retail departments earned 36,400 yuan. Other bread production and sales departments report similar profits. It is hoped that departments concerned address this issue and stop increasing commodity prices. [Excerpts] [SK220352 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 21 Sep 80]

NEI MONGGOL LIVESTOCK BREEDING--Hohhot, 10 Sep--Despite serious natural disasters, Nei Monggol has scored good gains in livestock breeding. As of the end of June, the total number of animals topped last year's record by 15.5 percent. The effect of this year's serious natural disasters will probably be seen in next year's production. [Beijing Xinhua Domestic Service in Chinese 0817 GMT 10 Sep 80]

NEI MONGGOL ANIMAL SALE--Xilin Gol League, Nei Monggol, recently held an enlarged standing committee meeting of its CCP committee. The meeting decided to sell 2.07 million head of livestock, 28 percent of the total number, either to commune members or to industrial and mining enterprises in order to ease forage grass shortage caused by serious drought. Young and weak animals and horses are to be sold and female animals, stud animals and cattle are to be protected. [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 17 Sep 80]

CSO: 4007

BRIEFS

COMMUNE INDUSTRIAL PRODUCTION--The Value of goods produced by commune-run industries in Shandong during the first half of 1980 registered a record 22.6 percent increase over the comparable period of 1979. The increase in individual products was much higher than the above figure. For example, the output value of timber, paper and flour mills and ceramic factories was up by 37.2-150 percent. Production of these industries in June showed a 55 percent increase over last January, and that of the second quarter was 67 percent higher than that of the first quarter. Moreover, product quality and profit also rose, while raw material and fuel consumption dropped. [Jinan DAZHONG RIBAO in Chinese 16 Jul 80 p 1]

MORE SMALL TRACTORS PRODUCED--By combining the efforts of county-run and commune-run industries, Rongcheng County of Shandong produced 3,430 twelve-hp tractors in 1979, a 7-fold increase over 1974, the year prior to the combined efforts. During the first 7 months of this year, 2,630 such tractors were manufactured, an increase of more than 40 percent over the same period of last year. [Jinan DAZHONG RIBAO in Chinese 15 Aug 80 p 1]

SILKWORM COCOONS--Shandong reaped a record harvest of spring silkworm cocoons this year. By the first 10 days of July, 91,000 dan of cocoons had been procured by the State, an 8-percent increase over the same period of last year. [Jinan DAZHONG RIBAO in Chinese 17 Jul 80 p 1]

PROCUREMENT OF SUMMER GRAIN--By July 23, Changwei Prefecture of Shandong had turned over or sold to the State more than 560 million jin of wheat, overfulfilling its state quota for the procurement of summer grain. [Jinan DAZHONG RIBAO in Chinese 27 Jul 80 p 1]

FARMLAND CONSTRUCTION--Yantai Prefecture of Shandong plans to build during this coming winter and next spring 600,000 mu of farmland that is assured of a good harvest irrespective of drought or flood. Its plan for farmland construction this coming winter calls for the mobilization of nearly one million persons (30-40 percent of the total labor force) and an investment of about 90 million yuan, 80 percent of which will be provided by local communes and production brigades. [Jinan DAZHONG RIBAO in Chinese 24 Jul 80 p 1]

CIRCULAR ON WHEAT SOWING--The Provincial Government of Shandong recently issued a directive calling on all areas in the province to do a good job in wheat sowing this autumn by summing up past experience, making adequate preparations for the timely sowing of a sufficient quantity of wheat crop and by strengthening leadership. Wheat is a major grain crop in Shandong, and wheat output makes up nearly 40 percent of the total grain output in the province. [Jinan DAZHONG RIBAO in Chinese 5 Aug 80 p 1]

SHANDONG AGRICULTURAL ZONING CONFERENCE--The Shandong Provincial People's Government recently held the second provincial work conference on agricultural resources surveys and agricultural area zonings. In light of the demands of the central authorities and the realities of the province, the participants set forth two targets: Completing the county-level soil surveys before 1983 and the county-level zonings of agricultural areas before 1985. They held that the violation of natural and economic laws has been the greatest obstacle to the development of agricultural production. [SK170131 Jinan Shandong Provincial Service in Mandarin 2300 GMT 15 Sep 80]

CSO: 4007

BRIEFS

SHANGHAI AIRCRAFT IN AGRICULTURE--Shanghai, 17 Sep (XINHUA)--Airplanes seeded rice and trees, applied fertilizer, weed killer and insecticides and created artificial rain on a total of 4 million hectares in East China from January to August this year. In addition, planes conducted aerial prospecting. Air-seeding of trees has been used on 51,000 hectares since spring this year, 9.5 times as much as in 1979. The planes, which flew a total of 4,560 hours, were sent by the Shanghai regional administration under the general administration of Civil Aviation of China. [OW181425 Beijing XINHUA in English 0738 GMT 17 Sep 80]

CSO: 4007

SICHUAN

BRIEFS

EARLY RICE HARVEST--The average per-mu yield from 810,000 mu of early rice in Yichang Prefecture, Sichuan, this year exceeded 600 jin, an increase of 10 percent over last year's. [Chengdu SICHUAN RIBAO in Chinese 1 Aug 80 p 1]

SUMMER GRAIN PRODUCTION--By July 15, Sichuan had overfulfilled its summer grain taxation and purchase quotas. Many communes and production brigades are still selling their surplus grain to the State. Despite this year's smaller summer grain acreage, and even though some counties were hit by natural calamities during last winter and spring, this year's total summer grain output in Sichuan still can reach or approach to that of last year, in which the highest annual grain output was registered. [Chengdu SICHUAN RIBAO in Chinese 24 Jul 80 p 1]

OUTPUT OF PLA FARMS--State farms run by PLA units stationed in Sichuan have completed their summer harvests. Their grain and edible oil output rose 13.4 percent over that of the same period of last year. [Chengdu SICHUAN RIBAO in Chinese 7 Aug 80 p 1]

CAMELLIA FORESTS--Fuling Prefecture of Sichuan planted more than 410,000 mu of new camillia (Thea Oleosa) forests in the past 4 years. This prefecture now has more than 660,000 mu of such forests, twice as much as in 1956, a year in which this prefecture had the largest camellia acreage in history. [Chengdu SICHUAN RIBAO in Chinese 5 Aug 80 p 2]

PEASANTS' INCOME INCREASED--According to a survey conducted by the Statistics Bureau of Sichuan on the finances of 1,724 commune-member families in 36 counties, the average per-capita cash income for the first half of this year was 42.3 yuan, an increase of 18.5 percent over the comparable period of last year. The survey also showed the sale of all major consumer goods rose during the same period. The estimated per-capita annual income for this year is 30-40 yuan higher than that of last year. [Chengdu SICHUAN RIBAO in Chinese 30 Aug 80 p 2]

SICHUAN AUTUMN FARMING--Chengdu, 13 Sep (XINHUA)--Cadres and commune members in Sichuan Province are overcoming difficulties caused by low temperatures and rains and are striving to do a good job in autumn harvesting, field management and planting. By now, Yibin, Jiangjin, Wanxian, Fuling and Leshan prefectures have harvested 50 to 70 percent of their intermediate rice crop. Various localities are planting such crops as potato, sweet potato, corn, buckwheat, vegetable and green manure and are carefully tending the cotton crop. In view of the abnormal weather conditions since the beginning of autumn this year, the Sichuan Provincial Government has issued an urgent circular calling on the rural areas to do their best in autumn harvesting, field management and planting. [OW181415 Beijing Xinhua Domestic Service in Chinese 0704 GMT 13 Sep 80]

SICHUAN UNDERGROUND WATER--Chengdu, 16 Sep (XINHUA)--Abundant underground water resources were recently found by a hydrological team of the PLA capital construction engineering corps in the northwestern grasslands of Sichuan Province. The grasslands stretch across Hongyuan, Aba, Zamtang and Sertar counties in northwestern Sichuan and cover a total area of 160 million mu of land. Irrigation water is now available from wells sunk in this area. [Beijing Xinhua Domestic Service in Chinese 0128 GMT 16 Sep 80]

CSO: 4007

BRIEFS

XIZANG HANDCRAFT DEVELOPMENT--Lhasa, 11 Sep (XINHUA)--The Xizang Autonomous Region People's Government recently appropriated a special fund, totaling 4.2 million yuan, to help develop collectively owned minority nationality handicraft enterprises. [Beijing Xinhua Domestic Service in Chinese 0120 GMT 11 Sep 80]

CSO: 4007

SPECIALIZED LABOR IN COMMUNES DISCUSSED

Hangzhou ZHEJIANG RIBAO in Chinese 24 Jun 80 p 2

[Article by Zhong Borong [6988 0130 2837], of Agricultural Office of Ningbo Prefecture]

[Text] In the countryside, following the development of agricultural sideline industries, in many communes and brigades a number of specialized teams (farms and factories), specialized groups and households, and specialized personnel, who are assigned work according to what [products] they are engaged in producing, have already appeared. This is a new change that has appeared in the organization of labor on people's communes in the countryside. It is advantageous for the scientific division of labor among the labor force, brings into play the effect of all kinds of human talent, raises the production-technique level and managerial level of personnel of all specialties, and is certain to further promote the overall development of the agricultural economy. As seen in the situation in Ningpo Prefecture at present, in general there are the following three types of specialized organization and division of labor:

Specialized Teams, Farms, and Factories

Generally, within the scope of operations of a commune or production brigade, according to what is being produced (mainly [sideline] industries, special forest products, the fishing industry, and animal husbandry), a specialized division of labor is carried out and specialized teams, factories and farms are set up; within each industry the division of labor is also according to the various items being produced and the different types of work. For example, in the fishing industry, there are production brigades for open-sea fishing, offshore fishing and fish raising,; in forestry there are mountain forests, mao bamboo, tea leaves, sericulture and fruit production [brigades]. In animal husbandry areas in some communes and brigades, a specialized division of labor is also used in raising pigs, cattle, rabbits, sheep and goats. The more varied the items produced by the communes' and brigades' industrial enterprises, the more refined the division of labor. Due to the fact that at present the main production by both communes and brigades engaged in is industry and sideline industry with a highly varied production, following the continuous strengthening of the economies of these two levels [commune and brigade], specialized personnel and a specialized organization of labor are certain to be more and more [in evidence.] However, since at the commune and brigade levels most of the labor force comes from the production teams, this then necessitates the correct handling of the relationship with the production teams, the basic accounting unit. The communes and brigades should allocate appropriate funds to a production team on the basis of the amount of labor it has provided. During the busy agricultural seasons one must carry out the necessary coordination of production, and the production teams must then enable the specialized personnel to enjoy the same treatment as the other commune members. These questions are best discussed through consultation by the commune and the brigades with the production teams, and set down in the form of a contract, to the "four satisfactions" of commune, brigade, production team and commune member.

Specialized Groups Within the Production Team

There are generally three kinds of situation for specialized organizations in the production team: One, in mountain areas, semi-mountainous areas and areas used for the production of economic crops, where there is comparatively little arable land and where comparatively many items are produced, a small number of production teams have set up specialized groups according to what is produced. For example, No 4 Production Team of Xixia Brigade, Tangyun Commune in Fenghua County has 77 households having [a total of] only 84 mu of arable land. They divided the entire team's labor force into the four specialized groups, i.e., mountain forest [products], special products (tea leaves, sericulture), industry and sideline industries and grain; [these groupings are] fixed for the year, and work is coordinated among them. Two, in areas on the plain that produce mainly grain and cotton, a portion of the production teams have set up small specialized groups for a definite portion of the work force involved in the production of small-scale economic crops, sideline industries, and animal husbandry. Three, in the production of field crops, during busy agricultural seasons specialized operation groups are set up temporarily according to the various kinds of work. There are also some production teams where, on management sections of rice or cotton fields, aside from the work of applying manure, controlling pests and irrigation, the management of farm work in the fields is portioned out among specialized management groups of from three to five persons. Since at present the scope of the production teams is definitely not large, they generally have from 20 to 30 percent of the labor force engaged in the commune's, the brigade's and outside areas' industry and sideline industries production. For this reason, the development of a varied line of production for production teams is objectively under a definite limitation, and many production teams have actually become specialized contingents for the production of grain and cotton. In this circumstance, the production teams, in making arrangements for their labor force, should proceed from reality and not further subdivide into small and complete operation groups. In the setting up year-round, seasonal or temporary specialized operation groups, labor should be divided scientifically according to what is being produced, the type of work, and the commune members' special capabilities. For every production item for which a specialized division of labor can be put into effect, the possibilities should be exhausted for setting up year-round, definite specialized groups, or temporary specialized operation groups. Comparatively large-scale production teams can set up year-round operation groups with a fixed basis in the fields, but they should not further subdivide small-scale economic crops, mountain forest products, special products or sideline industries for operation groups to manage.

Specialized Households and Specialized Personnel

Specialized households and specialized personnel are mainly engaged in the rather technical production areas, favoring a dispersed management, such as apiculture, animal husbandry and small-scale economic crops as well as such occupations as offshore fishing, handicrafts and agricultural machines. Practice clearly demonstrates that for certain items of production adopting the method of assigning work to specialized households and specialized personnel is advantageous for bringing into full play the enthusiasm of those commune members possessing definite specialized, technical capabilities, increasing the collective's and the commune members' income, enlivening the market, and satisfying the daily necessities of people in the city and countryside. For this reason, we should allow their existence and development. The labor force, however, must be arranged by the collective in a unified way; we must determine reasonably the labor compensation to specialized households and specialized personnel, and also set up the necessary systems of production responsibility, according to the various items being produced, adopting methods such as the "several fixes, one reward," or profit from a definite amount to be turned in to the government and giving over a job and recording the amount of work done.

Regardless of what type of specialized labor organization or specialized assignment of labor is adopted, judging from the present situation we must concentrate on solving the following several questions: the specialized organization and division of labor must definitely be based on the commune members' special technical capabilities, to the extent that a person should be able to use his talent to the utmost; once a specialized labor organization is set up, it should be relatively stable; since we want to do a good job of the specialized division of labor, we must also concentrate on doing a good job of coordination; we must set up strict systems of production responsibility and personal responsibility; we must strengthen our technical guidance and training, and continuously raise the specialized personnel's technical level.

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ZHEJIANG

DEDUCTION SHOULD BE MADE FOR FIXED PROPERTY DEPRECIATION

Advantages of System

Hangzhou ZHEJIANG RIBAO in Chinese 14 Jul 80 p 2

[Text] Carrying out an overall evaluation and putting in order the fixed property on the people's communes in terms of basic accounting units and putting a depreciation system into effect are important measures for strengthening economic accounting, consolidating and strengthening the economy of the collectives, and hastening the development of agricultural production.

We know that fixed property on people's communes in the countryside gradually suffers wear and tear and is used up, even to the point that it is scrapped altogether. Wornout and discarded fixed property has to be replaced, and therefore one should calculate a sum to be deducted to compensate for this depreciation. The proportion of the total earnings for a given year so deducted would then be the depreciation charge. Once the depreciation charge is deducted, the funds needed for the replacement of the fixed property will be guaranteed; otherwise, the original capital would be used up. However, there is no deduction for depreciation on the greater part of the fixed property of the communes and brigades in our province, and wornout fixed property does not have any regular source [of funds] for being replaced, and so the accumulation fund, production fund, or some other special fund must be tapped. Because of this, though to all appearances the accumulation fund of a good many communes and brigades is not small, in actuality a very great portion of it is used merely to make up for the depreciation of fixed property, while the amount that really serves as an accumulation fund and is used for expanding reproduction is actually not very large. The people's communes ought to put into effect everywhere a depreciation system for fixed property, in order to make good the value of the depreciation of fixed property caused each year by actual wear, to allow replacement of fixed property to have a regular source of funds, to enable the accumulation funds to be used exclusively for expanding reproduction, to guarantee the continuation of reproduction, to avoid blindness in the use of the accumulation funds that are deducted, and thus to hasten the consolidation and strengthening of the collectives' economy.

Some people might ask why, since an accumulation fund has already been collected, one should also collect a depreciation charge? The main reason for this sort of question is the failure to understand the meaning of depreciation, and the lack of a clear idea of the distinction, both in theory and in practice, between accumulation fund and depreciation charge. Some people have misgivings that once a charge for depreciation is deducted, it will reduce the commune members' income. Actually, not collecting a depreciation charge means failing to account for a portion of production costs, thereby falsely enlarging net income. If a depreciation charge is collected, one can accurately compute production costs and thereby accurately compute the amount of income that should be allotted to the commune members. In other words, in the case of some communes and brigades where in a certain year production decreases owing to some natural catastrophe, or where there have been very bad economic conditions, if deducting a depreciation charge is going to influence the commune members' allotted incomes, then according to the policy one could appropriately reduce the amount of the accumulation fund retained, using this to carry out an adjustment.

Putting into effect a depreciation system for fixed property is still a new job for our province. The area that it relates to is very broad, it is very much in line with our policies, and the amount of work required to implement it is great. Because of this, we must strengthen our leadership, strengthen our ideological education, arrange [the implementation of the system] in a concrete way, and make it into a great matter to be grasped for the reorganization and improvement of management and administration. In the course of doing a good job of getting pilot projects started, we must, on the basis of summarizing our experience, proceed in a well directed and systematic way from specific cases to a general [application of the policy], apportioning periods of time and areas in which to launch the policy. We must make the process of carrying out an evaluation of fixed property and setting up a depreciation system into a process of arousing the masses to run their people's communes democratically, industriously and thriftily. At the same time that we do a good job of putting in order and setting up a depreciation system for fixed property, we should set up a system for the care and use of fixed property and raise the management and administration of the people's communes to a higher level.

One Collective's Experience

Hangzhou ZHEJIANG RIBAO in Chinese 14 Jul 80 p 2

[Investigative Report by Huang Sheng [7806 3932]: "Collective's Family Property Increased; Commune Members' Income Raised"]

[Text] The Fellowship Brigade in the town of Haimen, Huangyen County has over a long period of time held steadfastly to [a system of] depreciation for fixed property and has strengthened economic accounting, guaranteed the continued replacement of fixed property, and caused the collective's family property to increase, the commune members' income to rise, and the collective's economy to become more and more prosperous all the time.

This brigade's putting into effect of [a system of] depreciation for fixed property was begun in 1964. At that time, the brigade's party branch discovered that the loss due to wear of the brigade's and all the production teams' fixed property was very great, and a very large portion of the common accumulation fund that was collected was used for the maintenance and replacement of farm machinery and tools, etc., and could not be used for expanding reproduction. In order to solve this problem. they discussed the matter with the cadres and commune members, and decided on a method of consulting each enterprise singly and putting into effect a system of depreciation for fixed property. The Fellowship Brigade has been implementing a system of depreciation on fixed property for 17 years, and the advantages reported by the cadres and commune members have been very many:

It guarantees that the quantity of fixed property will increase as production progresses; the common accumulation fund increases, and it is advantageous for the consolidation and strengthening of the collective's economy. In the past, a depreciation charge for fixed property was not collected, and after a tool was worn out, if one wanted to go on working it was necessary to use [money from the] accumulation fund to have it replaced. As a result, the amount of fixed property increased slowly, and the common accumulation fund could not really be used for expanding reproduction. After the implementation of a depreciation system for fixed property, if a tool was worn out, although the original object was scrapped, nevertheless a depreciation charge had already been collected, and so the value of it still existed. In this way, it guaranteed that the amount of fixed property could only increase and not decrease, and it also guaranteed that the accumulation fund would be used for the purchase of new property. Over the past 17 years, the entire brigade has collected a total of 615,000 yuan in fixed property depreciation charges, causing the total value of fixed property to reach 812,000 yuan; the accumulation fund collected amounted to 850,000 yuan. At present, this brigade has more than 80 agricultural sideline machines of all kinds.

It speeds up the repair of agricultural machinery and equipment and the adoption of new technology, raises the effectiveness of labor, and promotes the overall development of production. After a depreciation charge was collected, there was a reliable source for the funds needed for the replacement and repair of agricultural machinery and equipment, and this then enabled the brigade and the production teams to have comparatively more collective funds for the purchase of more and newer agricultural machinery and tools urgently needed for the development of production and for sideline industries. Furthermore, labor efficientcy was greatly increased, and so they could use the labor force that had been saved to develop many new areas of production. In 1979, in the entire brigade there were more than 400 persons engaged in sideline industries, comprising 66 percent of the entire work force, and the income from sideline industries amounted to 86 percent of the total income. Last year, the average income allotted to the commune members was 282 yuan.

It is possible to represent the cost and expenses of production accurately, and this is advantageous for strengthening economic accounting and lowering costs. In the past, because a depreciation charge was not collected, the wear and tear and using up of fixed property were not calculated into the cost and expenses of production, so that it was not possible to represent the cost of [producing the various] products accurately, or to carry out an accounting analysis of costs. After [a system of] depreciation for fixed property was put into effect, wear and tear on fixed property would constitute part of the production cost for a given year. If the fixed property were not managed well or not used properly, the amount of wear would be even greater, with the result that the depreciation charge would be even greater; the cost of production would be higher, and the commune members' allotment would be smaller. In this way, a direct connection was made between the quality of the care and use of fixed property and the commune members' economic advantage, and this proves very effective for urging the commune members to take care of collective property and carry through the guiding principle of managing their communes industriously and thriftily. For example, in 1976 on the No 4 production team, owing to the poor management of the feeding of the farm cattle, one cow was stolen and another died of disease--a loss of 900 yuan, calculated into the cost over a 2-year period. This taught the commune members a good lesson. Afterward, they strengthened management, and not only were the farm cattle well taken care of, but the members were very conscientious about the management of other property as well, and they greatly economized on production costs.

It is advantageous for a reasonable arrangement of the relationship between the accumulation fund and consumption, and for promoting the implementation of the allotment policy. Before a system for depreciation of fixed property was put into effect, in mapping out the "Know 1 Year in Advance" plan and in drawing up the yearend earnings allotment plan, the commune members were frequently not clear about how to assess the value of wear on fixed property, and so there was a definite blindness in their deduction of the accumulation fund. If they were to take more, then the commune members would get ideas [be suspicious]; if they were to take less, there would also be the fear that there would not be enough, adversely affecting the development of production. After the implementation of a system of depreciation for fixed property, the accumulation fund was used exclusively for expanding reproduction and for the addition of new fixed property, deducting as much each year as needed; this [system] then was somewhat easier to manage. The arrangement of the accumulation fund vs. expenses could then be made more reasonable and consistent with reality.

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ZHEJIANG

BRIEFS

MILK COW BASE--For the purpose of developing the milk products industry, the Hangzhou Food Products Factory adopted the method of linking the factory up with the farm, set up a milk cow base area, enabling its factory to get a good hold on its principal motive of developing production, and also increased the income of commune, brigade and commune members. The cooperative relationship between the Hangzhou Food Products factory and the Hangzhou Sijiqing Commune was established the earliest, and has been very effective in supporting the commune's development of the production of milk cows. Over the past one or two years the food products factory has successively established cooperative relationships with the Jianqiao, Hongwei, Dongfeng and other communes' dairy farms, and in October of last year also signed a contract with Zhuantang Commune, altogether setting up seven diary farms. After these milk cows base areas were set up, the factory helped them bring in bulls and frequently sent experts to carry out technical guidance, thus promoting a continuous rise in the dairy farms' managerial and technical level. The reason for the establishment of the milk cow base was to provide an adequate supply of milk for the factory. In 1979 all the base area dairy farms together supplied to this factory 4.36 million jin of fresh milk, a 36 percent increase over 1978. Following the increase of the milk source, the milk products also correspondingly increased. In 1979 altogether 261 tons of milk powder were produced, a 51 percent increase over 1978. By the end of May, 152 tons of milk powder have already been manufactures, a 19.23 percent increase over the same period last year. At the same time, the income of commune, brigades and commune members increased; in 1979 the income of all the milk cow bases from fresh milk alone amounted to 813,600 yuan. [Text] [Hangzhou ZHEJIZNG RIBAO in Chinese 23 Jun 80 p 2] 9684

AGRICULTURAL BANK SUPPORTS RURAL AREAS--The Zhejiang provincial branch of the Agricultural Bank of China has made great efforts to support communes and brigades in the countryside in developing the production of commercial products. So far this year, throughout the province they have granted agricultural loans [totaling] over 620 million yuan, an increase of 61 percent over the same period last year. In order to enable the funds to be better used to economic advantage, this year agricultural banks at all levels throughout the province and over 3000 credit cooperatives have already separately selected 7000 model production teams, and are helping them to bring their own superior features into full play, and progress with the major item of commercial products production. Most recently, the provincial branch bank allocated the sum of 45 million yuan in agricultural loans, selecting the best and supporting the model teams in developing commercial products production. The first agricultural loan of 15.8 million yuan was granted to 21 counties including Tonglu, Xiangshan and Pingyang. These funds, apart from being used for developing traditional products such as silkworms, tea leaves, tangerines and oranges, will also support Tonglu's apiculture, Fuyang's handmade paper, Pingyang's straw weaving, Xianju's day lilies, Yunhe's black tree ear [fungus], as well as cold storehouse's for aquatic products in the fishing areas along the coast. Regarding the eleven barren mountain counties, this time a loan of 7.65 million yuan was granted, comprising 48.4 percent of the total sum of the first grant. [Text] [Hangzhou ZHEZIANG RIBAO in Chinese 25 Jun 80 p 1] 9634

ZHEJIANG COUNTY RICE HARVEST--This year Suichang county, Zhejiang, has reaped a bumper harvest of early and middle-season rice. As of 20 August, 284 production teams of the county had fulfilled annual grain procurement plans and had sold 580,000 jin of grain at higher prices. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 3 Sep 80]

CSO: 4007

Plant Protection

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TITLE: "Studies on Peanut Rust in Guangdong Province"

SOURCE: Guangzhou ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 67-74

TEXT OF ENGLISH ABSTRACT: Peanut rust (*Puccinia arachidis* Speg.) was first found in Guangdong in 1956, and has become epiphytotic since 1970, causing 25-59 percent in yield losses.

The rust fungi infect leaflets, petioles, stipules, pegs and hulls, producing typical pustules. Only uredospores have been observed. The optimum temperature for uredospore germination is 24.5-28°C; the thermal death point is 50°C. The incubation period is 6-8 days at 24.5-26.5°C, and longer at 21°C and 29°C.

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 67-74]

Uredospores on leaflets, kept at 21-25°C, retained germinability and infectibility for 120-150 days. Intensive sunlight inhibits spore germination.

Penetration mostly takes place through the stomatal opening of the leaflets, but may also happen through the intercellular space of the epidermis. The amount of rainfall and retention of dew period play an important role in the disease development, as the temperature is favorable for the rust fungi during the growing season. Volunteer rusted plants, infected crop debris, diseased hulls are the primary sources of inoculum, the first source mentioned being the most important.

About 1000 cultivars of peanuts have been screened for resistance; none is highly resistant, but the varieties tested differed greatly in susceptibility.

Early planting in the spring, late planting in the autumn, using resistant varieties, spraying at 8-10 day intervals three to four times during the period of disease onset, may significantly reduce the incidence of the disease and increase yields. Daconil is the most efficient fungicide of all the chemicals tested.

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TITLE: "On the Control of Head Smut of Corn"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 75-82

TEXT OF ENGLISH ABSTRACT: The head smut (Sphacelotheca reiliana (Kuhn) Clint.) of corn is one of the most important diseases in the Baicheng region of Jilin Province. The percentage of smut plants is usually about 3-5 percent, and sometimes over 30 percent. The symptoms in addition to the ordinary stunting, rosetto and polystooling were observed. The smut balls occur mostly on ears and somethimes on both ears and tassels.

Chlamydospores collected from natural dissemination showed a high percentage of germination, but those collected from the inner part of the sorus were low in germination. Although it might be carried on seedcoat, soil transmission is considered to be the main mode of dissemination since the chlamydospores maintained their vitality in soils for three years. Higher infections might be

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 75-82]

obtained from the contaminated soil.

Infections in the seedling stage occurred abundantly until the four-leaf stage, and actually decreased from the start of the five-leaf stage. No infection took place at the leaf stage.

Head smut fungus from corn did not infect sorghum. On the other hand, corn plants were infected by sorghum head smut at a low rate. The chlamydospores thus produced from corn plants lost the ability to infect sorghum, but infected corn at an increasing rate. This might be due to the different physiological races in the smut inoculum. The head smut fungi collected from Shanxi and Xinjiang were weak in pathogenicity while that from Liaoning and Jilin are strong.

More than 200 inbred lines and hybrids have been tested for their resistance to head smut in field plots. The highly resistant varieties were almost immune. The resistance of maternal plants had more important influence on next generations.

Over 100 fungicides were tested for seed treatment, with a few of them showing 70 percent controlling effects but were not stable in different years. Most fungicides showed only 50 percent controlling effects.

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TITLE: "On the Integrated Control of Rice Dwarf Disease in the Second Crop of Rice"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 83-88

TEXT OF ENGLISH ABSTRACT: The rice dwarf disease of the second crop of rice transmitted by leaf-hoppers was to be reduced over 80 percent by the following measures: adopting resistant (or tolerant) rice cultivars, improving cultural practices, growing the rice cultivars of about the same growth duration in the adjacent stretches of fields and applying insecticide one to three times at the initial stage of plant growth in transplanted fields. Without adopting agricultural measures and merely applying insecticides one to three times for the

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 83-88]

second crop of rice, less than 59 percent of control resulted. In small areas of rice fields, only two to four applications during the peak stage of insect vectors migration resulted in better than 80 percent control. If it is expected to control the incidence of dwarf disease in the second crop of rice down to 1 percent, 3 percent and 5 percent, the number of leaf-hoppers per plant used as criterion for insecticide application was 4, 12 and 20 respectively when the viruliferous rate of vectors was 2.5 percent. When the viruliferous rate of vectors was 5 percent, the number of leaf-hoppers per plant used as criterion for insecticide application was 2, 6 and 10 respectively.

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TITLE: "A Preliminary Study on the Vitality of *Gibberelia zeae* (Schw.) Petch. in a Rice Field in Shanghai"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 89-92

TEXT OF ENGLISH ABSTRACT: In accordance with the actual condition of a wheat-early rice-late rice system in Shanghai, three experiments on the vitality of *Gibberella zeae* were carried out in soil pots with an imitation of the paddy field conditions in the open during 1974-1978.

The results of spore germination experiments obtained in 1974 and 1975 indicated that both macro-conidia and ascospores with their substrata, although immersed in the water layer of the soil pots, could maintain their vitality up to 18-20 days.

Results of transplanting the early- and late-rice seedlings into the inoculated water layer of the soil pots throughout the rice growing season showed that the scab fungus could neither oversummer nor overwinter in such a water layer of

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 89-92]

soil pots. Furthermore, no viable hibernating mycelia were detected from the overwintered rice stubbles from the above pots.

During the years 1974-1978, observations made on the source of the primary infection revealed that the perithecia were only produced on the overwintered rice stubbles which were collected from the field after the sowing of wheat, but not on any other rice stubbles which were collected from the same field before the sowing of wheat. It is considered that the primary source of infection of the scab disease was chiefly the diseased wheat seeds.

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TITLE: "Studies on the Orientation Establishment Behavior and Feeding Reaction of the Newly Hatched Larvae of the Yellow Stem Borer to the Rice Plant and to Oryzonone"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 93-100

TEXT OF ENGLISH ABSTRACT: These studies were carried out in 1961-1964 in Nanjing, Jiangsu Province. The results are summarized as follows:

1. On the rice plant during the tillering-prebooting stages, the newly-hatched larvae of *Tryporyza incertulas* (Walker) always leave the leaf portion, then crawl downward on the leaf sheath and bore into the plant. Such orientation behavior is not determined by positive geotropism.
2. The feeding site of the newly-hatched larvae seems to depend upon the

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 93-100]

developmental stage and the variety of rice plant. For instance, on the tillering stage plant, the distance between the bore and the basal part of the plant is less than 10 cm; on the prebooting stage plant it is 10-20 cm; after the booting stage it is more than 30 cm.
3. The feeding behavior of the newly-hatched larva in response to the various stages of rice plants was found to coincide with the oviposite selection of the adults. In the different stages of the rice plant, the leaf sheath of the tillering and booting stages was found to be preferred by the first instar larva to that of the prebooting and grain-filling stages.
4. An attractant substance for the newly-hatched larva was found to exist in the leaf sheath and in the booting stage of the rice plant, whereas in the leaf tissue, an anti-feeding substance may possible exist.
5. The order of establishment quantity of the newly-hatched larva on the rice plant is: seedling of 17 days > seedling of 44 days; for the survival of the first instar larva the order is: old seedling > young seedling.
6. The compound "oryzonone" synthesized by the authors was found to be attractive to the newly-hatched larva in certain concentrations.

The cause for change of the orientation site and establishment quantity of the newly-hatched larva is also discussed.

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TITLE: "Studies on the Sampling Method of the Nymphal Stage of the Oriental Migratory Locust (*Locusta migratoria manilensis*)"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 101-112

TEXT OF ENGLISH ABSTRACT: Since the end of the 50's, the sampling method for estimating the population density of the nymphal stage in locust outbreak areas has been simple random sampling with sampling units of 3.3 m^2. As a result of combined measure of reconstruction and chemical control of more than 10 years, the population density of this pest has been markedly decreased. In such a low density condition, from an economic point of view, which sampling method is suitable for the nymphal stage should be ascertained.

In this paper, several comparisons among three sampling methods (i.e., simple random sampling, stratified sampling for proportion and stratified sampling for optimum allocation) and three types of sampling units (i.e., 3.3 m^2,

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 101-112]

16.5 m^2, 33 m^2), are made with respect to sample sizes, sample cost and relative precision, etc.

According to these results, a suitable sampling method is proposed, which is stratified sampling for optimum allocation with 33 m^2 of sampling unit. The relative precision for this sampling is 2.2 times higher than that of the sampling method usually used and the relative time cost is 2 times less.

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TITLE: "Studies on the Mass Rearing of Corn Borers. I. Development of a Satisfactory Artificial Diet for Larval Growth"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 113-122

TEXT OF ENGLISH ABSTRACT: The development of a satisfactory semi-artificial diet (oligidic) from 1962 to 1978 for mass-rearing of corn borers (Ostrinias Spp.) is reported. New Diet No 7 contains mainly soybean meal (15 g), corn meal (19 g), Brewer's yeast (9 g), glucose with vitamin mixtures (7.5 g) and ascorbic acid (0.5 g) as its nutritive ingredients, together with water (120 cc) and agar (2 g) to form a solid medium for the borer. Soybean meal used in this experiment was a mixture of coarse and fine particles, autoclaved at 15 lb for 30 min before use. Corn meal, which was also a mixture of different sized particles, was treated in an oven with a temperature of 110-120°C

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 113-122]

for about 100 min. Sorbic acid (0.5 g) and formalin (0.2 cc) were used as antibiotic agents. The former was added directly into the boiling agar solution and dispersed evenly in the medium as crystals after cooling in order to avoid any undesirable effect of the organic solvent. Although Bottger reported that no enzymes capable of hydrolyzing starch were found in the digestive tracts of corn borer larvae, the authors found that incorporation of corn meal into the diet did increase pupal weight to a significant extent. After inoculation of egg masses on the diet, the larvae developed from newly-hatched to fully grown in about 21 days under conditions of 28-30°C and 70-90% RH. The average weight of female pupae was around 105 mg, the average rate of emergence was 34.4%, and the average egg production per female was 10 masses. The results obtained were comparable to or somewhat better than those reported by L. L. Lewis and R. E. Lynch in rearing European corn borers on a wheat germ diet. The improved technique reported in this paper was successfully used in the research on host plant resistance, sex attractants and a sterile male technique. Experiments showed that females of a 17th generation exhibited a strong attraction to the wild males under field conditions and males emerging from pupae irradiated with a semi-sterilizing dose competed comparably with wild males under both laboratory and field caged conditions.

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TITLE: "Studies on the Selective Toxicity of the Pesticide Mixtures"

SOURCE: Tianjin ZHIWU BAOHU XUEBAO [ACTA PHYTOPHYLACTICA SINICA] in Chinese No 2, Jun 80 pp 123-132

TEXT OF ENGLISH ABSTRACT: The acute oral toxicity of the mixtures of dimethoate or malathion with EBP or IBP was determined in mice. The toxicity of dimethoate was enhanced 2.4 and 4.5 times respectively by IBP and EBP, and the toxicity of malathion was increased 5.5 times by EBP.

The enzymatic hydrolysis of dimethoate, N-methylcaproamide and α-naphthylacetate by mouse liver homogenates was strongly inhibited after oral treatment of mice with EBP or IBP. Almost complete inhibition of the carboxyamidase and the carboxylesterase occurred sooner after a single oral dose of EBP (121 mg/kg) or IBP (343 mg/kg).

[Continuation of ZHIWU BAOHU XUEBAO No 2, Jun 80 pp 123-132]

The hydrolysis of dimethoate and N-methylcaproamide by the amidase of sheep liver microsomes in vitro was strongly inhibited by EBP, IBP, triphenylphosphate (TPP), tri-ortho-tolylphosphate (TOCP), EPN, omethoate and carbaryl respectively. These inhibitors had lower I_{50} values in the range of 1.3×10^{-8} to 4.0×10^{-5} M. Tests showed that EBP, IBP, TPP and carbaryl were competitive inhibitors for both the carboxyamidase and the carboxylesterase of sheep liver microsomes. Inhibition constants (K_i) for these inhibitors ranged from 4.8×10^{-8} to 1.0×10^{-7} M. These results indicated that the synergistic mechanism for the above pesticide mixtures was attributed mainly to EBP or IBP, which inhibited the detoxification normally occurring by the hydrolysis of the carboxylamide linkage of dimethoate or the carboxylester linkage of malathion catalyzed by the carboxyamidase or the carboxylesterase.

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